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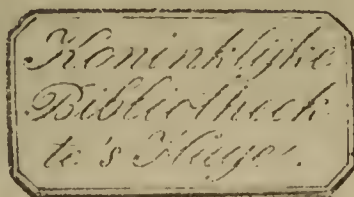
TRANSACTIONS
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ASSOCIATION
OF
FELLOWS AND LICENTIATES
OF THE
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COLLEGE OF PHYSICIANS
IN IRELAND

VOLUME V.

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J. CUMMING, LOWER ORMOND-QUAY ;
AND LONGMAN, REES, ORME, BROWN, AND GREEN, LONDON.

1828.



ADDITIONAL

OF THE

OF THE

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ASSOCIATION OF MEMBERS
OF THE
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COLLEGE OF PHYSICIANS IN IRELAND,
INSTITUTED 19TH JUNE, 1816,

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Page 288, line 7, *for attending by, read attended with.*

CONTENTS.

- 1 On the use of the Nitrate of Silver in certain affections of the Eye, by Isaac Ryall, Esq. Surgeon-Oculist to the National Institution for the cure of Diseases of the Eye in Dublin, and late chief Medical Officer to the General Naval Hospital for Prisoners of War at Gosport, . . . 1
- 2 Observations on the use of Emetics of Ipecacuan in Menorrhagia, by Jonathan Osborne, M. B., Fellow and Registrar of the King and Queen's College of Physicians, Physician to Sir Patrick Dun's Hospital, and Lecturer on Materia Medica at the Medico-Chirurgical School, Park-street, . . . 18
- 3 Observations on the Peripneumonia of Children, by Thomas Cuming, M. D., Licentiate of the King and Queen's College of Physicians, Assistant Physician to the Institution for the Diseases of Children, one of the Physicians to the Wellesley Fever Hospital, and Lecturer on the Practice of Physic at the School of Medicine, Richmond Surgical Hospital, . . . 30
- 4 Case of Open Foramen Ovale in an Adult, by John Crampton, M. D., Honorary Fellow of the King

and Queen's College of Physicians, Professor of Materia Medica, and Physician to Steeven's Hos- pital, &c.	71
5 A Case of Extirpation of an unusually large Steatoma- tous Tumor from the Neck, by Patrick Daly, M. D., Member of the Royal College of Surgeons in London, and Surgeon to CloghJordan Dispen- sary, County Tipperary,	84
6 On the Indications afforded by the sensible Qualities of Plants, with respect to their Medical Properties, by Jonathan Osborne, M. B., &c. &c. &c.	96
7 Case of Tubercular Affection of the Skin, by John Crampton, M. D., &c. &c. &c.	125
8 Cases intended to illustrate the Application and Utility of the Stethoscope, by Richard Townsend, A. B. M. D., Licentiate of the King and Queen's Col- lege of Physicians, Medical Inspector of the House of Industry, &c. &c.	137
9 Sequel of the Case of Mary Riordan, published in Transactions of Association, volume iv., by W. Pickells, M. D., one of the Physicians to the Fever Hospital, Cork,	171
10 A Case illustrative of the effects of a Division of the Spinal Marrow, between the third and fourth Dorsal Vertebrae, in the Human Subject, with Re- marks, by William Wallace, M. R. I. A., Surgeon to the Charitable Infirmary of Dublin, and to the Infirmary for the Treatment of Diseases of the Skin, Lecturer on Clinical Surgery, &c. &c.	197
11 Sketch of a Medical Report on the Epidemic Dysen- tery which prevailed in Dublin in the year 1825, by John O'Brien, M. D., Fellow of the King and Queen's College of Physicians, &c. &c.	221

- 12 An Account of a Dissection of a Dislocated Hip, with Remarks, by William Wallace, M. R. I. A., &c. &c. 250
- 13 Clinical Observations made during the Epidemic Fever of 1826, by Robert Reid, M. D., President of the Association, Senior Physician to the Kevin-street Fever and Dysentery Hospital, &c. &c. 266
- 14 Clinical Observations on Phthisis Pulmonalis, by William Stokes, M. D., Licentiate of the King and Queen's College of Physicians, one of the Physicians to the Meath Hospital, and Lecturer on Medical Jurisprudence at the Medico-Chirurgical School, Park-street, 303
- 15 A Pathological Inquiry into the Nature of Hydrocephalus, grounded on an attentive observation of the Phenomena, and of the Appearances presented on Dissection, by Thomas Mills, M. D., Honorary Fellow of the King and Queen's College of Physicians, 350
- 16 On Internal Inflammation of the Eye following Typhus Fever, by Arthur Jacob, M. D., Professor of Anatomy in the Royal College of Surgeons in Ireland, Surgeon to Sir Patrick Dun's Hospital, and to the Ophthalmic Hospital, Pitt-street, 468
- 17 Case of Extreme Difficulty of Respiration successfully treated with Hydrocyanic Acid, by Michael Ryan, M. D., Member of the Royal College of Surgeons, London, and Corresponding Member of the Association of the Fellows and Licentiates of the King and Queen's College of Physicians in Ireland, 479
- 18 Appendix to "Cases intended to illustrate the Application and Utility of the Stethoscope," by Richard Townsend, A. B., M. D., &c. &c. &c. 484

- 19 Case of Indurated Enlargement of the Uterus, successfully treated with Iodine, by R. Ashburner Thetford, M. D., T. C. D., Fellow of the King and Queen's College of Physicians, &c. &c. . 507
- 20 Medical Report of the House of Recovery, and Fever Hospital, Cork-street, Dublin, for the year ending 4th of January, 1827, by John O'Brien, M. D., Fellow of the College of Physicians, &c. &c. . 512

ON THE USE
OF THE
NITRATE OF SILVER
IN CERTAIN AFFECTIONS OF THE EYE.

By ISAAC RYALL, ESQ.

SURGEON-OCULIST TO THE NATIONAL INSTITUTION FOR THE CURE OF DISEASES OF THE EYE IN DUBLIN, AND LATE CHIEF MEDICAL OFFICER
TO THE GENERAL NAVAL HOSPITAL FOR PRISONERS OF WAR
AT GOSPORT.

Read by Dr. Brooke, January 2, 1826.

For the prevention and relief of some of the most unseemly and dangerous morbid changes of the eye and its appendages, the *Materia Medica* supplies no one article so generally useful as the nitrate of silver.

The high character it has so justly obtained in certain conditions of this important and delicate organ, has led to its indiscriminate application, and to its becoming a dangerous implement in the hands of the inexperienced. There is scarcely a stage or modification of ophthalmic disease which

does not experience either its salutary or injurious powers; and it is now employed, not only by every denomination of medical practitioners, but by the patients themselves and their uninitiated friends.

I now proceed briefly to consider those conditions of the organ to which this remedy is peculiarly applicable, and shall take leave to notice, by the way, such auxiliary means as may promote its efficacy.

ULCER OF THE CORNEA.

This is one of the most frequent and serious terminations of ophthalmia, and that under which a large portion of those poor persons suffer, who apply for relief at the National Institution for curing Diseases of the Eye in Dublin, in which city, owing to various causes, this affection is more prevalent, and assumes a worse character than in any other part of the United Kingdom.

The cornea, after protracted, and sometimes after comparatively mild inflammation of the conjunctiva, is frequently occupied by an infinite number of small superficial ulcers, appearing as mere depressions or losses of substance in the investing tunic. These, though so minute as to require the closest inspection, and even the aid of glasses for their detection, yet are productive of no small share of

irritation and inconvenience. Hence this irritation is sometimes ascribed to primary inflammation, and ineffectual, if not injurious, means of relief resorted to. I have not unfrequently known patients of weakly strumous habits to have been condemned to long confinement in darkened apartments, to a strict antiphlogistic regimen, and even to the influence of mercury, whose miseries might have been, in a great measure, curtailed, had the precise nature of their complaint been timely discovered, and the nitrate of silver applied.

For the superficial ulcer a solution, in the proportion of two grains of the mineral to one ounce of distilled water, will generally answer; but if the ulcers betray an indisposition to heal, a stronger one will be necessary, which here, as well as in the purulent ophthalmia of infants, considered on a former occasion,* can be conveyed to the part with more efficacy and convenience in the form of injection than in any other, especially in the cases of young persons, who generally resist every application to their eyes whilst suffering under irritation.

For ulcers deeply penetrating the laminæ of the cornea this remedy is still more imperiously demanded, if we would rescue the organ from imminent destruction. In addition to the injection it will be necessary to apply exclusively to the ulcer with a fine camel-

* Trans. of Association, Vol. IV.

hair brush, as strong a solution of the nitrate of silver as can be made, or the caustic in substance pointed like a crayon pencil, dropping into the eye, after each of these applications, a little oil of sweet almonds. This is to be repeated on each separation of the eschar, and continued until the ulcer assume a more healthy action, and the patient obtain, if not a complete freedom from, a sensible remission of pain.

The escharotic is then to be laid aside, and the weak solution employed as a collyrium to the end of the treatment. The internal use of mercury has been considered by some to be no less a specific in ulcer of the cornea than in syphilis. It should not be forgotten, however, that the habits in which this affection most frequently occurs, are those in which mercury, at least to any extent, is inadmissible. In delicate constitutions light nutritious diet, healthy situation, mild tonics, and salt-water baths, whose temperature is regulated by the season and the strength of the patient, will greatly contribute to improve both the general and local affection. In irritable and highly inflamed conditions of the eye the prudence of withholding stimulant applications cannot be questioned. In the irritation, however, attendant upon, and kept up by, ulceration of the cornea, this caution has been carried to a mischievous length; we must in this case seek relief in the means best calculated to induce the healing

process: and we are assured that by the application of the nitrate of silver, deposition of lymph, so essential to our object, is most effectually produced; that the extreme sensibility occasioned by a denuded state of the nerves is obtunded, and an almost instantaneous remission of morbid intolerance of light and irritation attained. There is, however, a contra-indication of this remedy under the circumstances of redundancy of lymph, or of interlaminary ulceration or effusion, when the object is, by means of local blood-letting, purgatives, and emollient fomentations, to diminish the vascular action of the part. If considerable pain and inflammation be present, the nitrate of silver must either be accompanied by, or give place to, according to the violence of these symptoms, the means just mentioned; and if no constitutional taint forbid, a pill composed of calomel, antimony, and opium, should be administered twice a day, until the mouth be slightly affected, or the symptoms recede. It has been the practice in ulceration of the cornea to drop into the eye a little of the vinous tincture of opium twice or thrice a day; but this is known greatly to aggravate the irritation, without in any degree contributing to produce healthy action of the parts.

PUSTULE.

This affection of the conjunctiva, considered to be analogous to the chancre or aphthæ of the mu-

cous membrane of other parts, appears in the form of one or more little eminences, either on the sclerotic or cornea, but most frequently at the junction of these tunics, where, as they advance towards suppuration, they bear no slight resemblance to little pearls set round the edge of the cornea, on which their encroachment is greatly retarded in consequence of the latter membrane being more closely connected to the conjunctiva than the sclerotic is. This form of ophthalmia, being the concomitant of a scrofulous taint, is met with in all ranks of society, but in no particular situation is it more prevalent than in the charity-schools of Dublin, owing perhaps to the want of a due proportion of animal food. Should the attendant inflammation be urgent, leeches and purgatives must be employed, but the ulcerative process of the pustules will be restrained, and in most cases speedily removed by a few light touches of the stronger solution of the nitrate of silver. Advantage will also be derived from the application of a dilute ointment of the nitrate or supernitrate of quicksilver every night to the pustules. Pustular ophthalmia, being influenced by a scrofulous taint, must be expected to recur; it is, nevertheless, important to prevent its injurious effects on the cornea, which a vitiated habit would greatly favour.

SLOUGH OF THE CORNEA.

As an external remedy in this dangerous state of the eye, there is none so grateful, or withal so efficacious for throwing off the morbid parts, as a solution of the nitrate of silver in the proportion of eight grains to the ounce of distilled water, briskly injected against the slough three or four times a day. But to obviate and arrest the progress of this serious termination of disease, we must rest our chief reliance on the extract of cinchona, so justly praised by the late Mr. Saunders. Opportunities are afforded to me but too frequently of giving this medicine a fair and full trial, in the cases of young infants born for the most part in the Lying-in-Hospital, and I assert that greatly as I had been prepossessed in its favour, it far exceeded my expectation, since both shape and function were preserved to an extent I dared not to hope for, in several instances where death of the exterior laminæ of the cornea, or of a segment of its entire thickness, had already taken place, and when the eye had presented the appearance of a disorganized mass. I have also lately used the sulphate of quinine in sloughing cornea with manifest advantage.

PROTRUSION OF THE IRIS.

When slough or ulceration shall have penetrated through all the laminæ of the cornea into the ante-

rior chamber of the eye, and when, owing to the escape of the aqueous humor, collapse of the cornea and protrusion of the iris shall have taken place, necessarily contracting, or if the prolapse be considerable, entirely closing up the pupil, the nitrate of silver is our chief, perhaps our only, resource. In this state the aqueous humor continues to be distilled through the aperture as fast as it is secreted, until, by a new production of parts, or by the adhesion of the iris to the cornea, or by both, the breach is filled up. It is extremely gratifying to witness the striking and happy effects produced by a few applications of the pencil-pointed nitrate of silver, or by its strong solution. Healthy action and new growth of parts are thereby quickly obtained, the cornea resumes its convexity, the protruded iris is retracted, and, unless the breach has taken place in the centre of the cornea, vision is completely restored. It is scarcely necessary to say, that the slightest adhesion of the iris to the cornea must produce contraction or oblongation of the pupil, but these do not materially impede vision, and may often be obviated by the early use of the extract of the *atropa belladonna*, reduced to the consistence of cream, and rubbed to the orbit and eyelids twice or thrice a day, or to a more liquid form, and dropped into the eye. The former mode of applying this narcotic, as being productive of no irritation, deserves a preference, as well for this purpose, as for that of dilating the

pupil before, and preventing adhesions after, the operations for cataract and closed pupil.

NEBULOUS CORNEA.

This state of the cornea, being the result of protracted chronic inflammation, which is always aggravated on exposure to cold, or indulgence in the use of fermented or spirituous liquors, consists in a thickening and encreased vascularity of the conjunctiva, and in effusion between this membrane and the exterior lamina of the cornea of an albuminous fluid, which has this distinguishing character from interlamellary deposition, that it is not disposed to point outwardly in the form of pustule. The veins on the sclerotic are turgid, varicose, and tortuous, inosculating at the junction of the sclerotic and cornea, from whence they take a radiated direction towards the points of density in the cornea.

The offuscation of the cornea is sometimes so great as scarcely to allow the subjacent iris and pupil to be seen ; and if the affection be the consequence of the Egyptian, or purulent ophthalmia of adults, the cornea assumes that toughness and shining whiteness, peculiar to cartilage, a condition admitting of little amelioration.

A profuse morbid secretion from the tarsal glands

is also another, and a very distressing, accompaniment of nebula. The application of leeches to the inner surface of the lower palpebra, the exhibition of purgatives, and precaution against strong liquors and cold, are the first objects to be attended to. If granulations exist on the palpebræ, they are to be removed by the means hereafter to be mentioned under the head of "granular palpebræ." After the vessels shall have been well emptied by the daily application of two leeches to the conjunctiva of the lower eyelid, and a few purgatives have been administered, a circle, or as large a segment of one as will include the opaque portion of the cornea, is to be described with the pencil-pointed caustic on the sclerotic at about two lines distance from its junction with the cornea. After the eschar has sloughed off, ulceration is to be kept up for some time by the same means, care being taken to subdue any excessive inflammation which may be thus produced. The solution of the nitrate of silver, varying according to circumstances in the proportion of from two to six grains to the ounce, is to be frequently injected into the eye, and the ointment of the red oxyde of mercury applied every night to the tarsi, a portion of which may be allowed to be diffused over the surface of the eye-ball. In some of the worst cases of nebulous cornea the liquor subacetatis plumbi has been dropped into the eye twice a day with great advantage. Absorption of the effused lymph and contraction of the vessels

were speedily produced. It must be acknowledged, however, that these are not in the majority of cases its gratifying results. It is the practice with some to cut off with a pair of curved scissors a portion of the conjunctiva concentric with, and about two lines distant from, the cornea, and to continue the excision as far around the circumference of that tunic, as its extent of opacity may require. The turgid vessels are by this plan emptied ; but it has been found, when adopted in an irritable state of the organs, to create excessive inflammation and a new production of vessels. For the relief of that truly distressing attendant of this and other forms of protracted ophthalmy, profuse secretion from the lachrymal and tarsal glands, the dilute sulphuric acid, in the dose of from twenty to thirty drops in a glass of water twice or thrice a day, will prove of singular benefit ; and it is probable that if combined with the sulphate of quinine its virtue would be still further enhanced. The probable advantage to be derived from the sulphuric acid, if used in a still more dilute form as a collyrium, may be judged of from the following case.

Mr. A. of Leith, near Edinburgh, consulted me last year under the following condition of the right eye :—great vascularity both of sclerotic and cornea with albuminous effusion ; the globe felt soft, was diminished in size, very irritable, and vision almost entirely lost. The superior palpebra was granular,

and there was an excessive discharge, sometimes of tears, and at others of puriform matter. A combination of the blue pill and compound extract of colocynth was administered, two leeches were directed to be applied every day to the inner side of the lower eye-lid, and the solution of the nitrate of silver, in the proportion of four grains to the ounce, to be injected three or four times a day; but as the eye seemed to be approaching to disorganization, the eschar was not formed on the sclerotic. Means were employed for the removal of the granulations on the palpebræ, and half a drachm of the dilute sulphuric acid was administered thrice a day in a glass of water. The ointment of the red oxyde of mercury was also applied every night to the tarsi. Under this treatment the case was manifestly, though slowly, becoming improved, until one day the patient had the dilute sulphuric acid, by mistake for the caustic solution, injected into his eye. This accident, as may be supposed, was attended with great pain; but this was not of long duration, and thenceforward the case rapidly advanced to restoration, which had been nearly completed when urgent business called him home. I have since heard, through a friend of his, whom he recommended to my professional care, that the eye had fully recovered both its healthy appearance and function.

ALBUGO.

In no case has the nitrate of silver been more abused than in the early stage of albugo, which consists in a deposition of coagulable lymph effused by the arteries during the presence of ophthalmia, between the laminae of the cornea, and which remains after the inflammatory action has subsided. Absorption in this stage is more judiciously attempted by topical blood-letting, and alterative doses of calomel, antimony, and opium, than by local stimulants, whose premature use would be productive of encreased vascular action and deposition. When, however, the former have been persisted in for some length of time, which the experience and observation of the surgeon can only determine, it will become necessary to have recourse to the latter, which should consist in a solution of from four to eight grains of the nitrate of silver to one ounce of distilled water, and in a weak ointment of the red oxyde of mercury; the former to be applied twice or thrice a day, and the latter every night with a camel-hair pencil to the speck. If the patient be young, and the deposition recent and superficial, these means will generally succeed; and even under the opposite circumstances, perseverance for several months has effected a cure which at first might appear hopeless.

LEUCOMA.

By this term is now understood that dense, pearl-coloured, inveterate opacity, occupying either a part or the whole of the cornea, and the result of extensive disease and change of structure in that tunic. The disorganized state of the parts precludes all hope of relief either from local or general means. The removal of any portion of the opaque substance, either by the knife or caustic, could be attended by no other consequence than the succession of a body of equal density, and probably of one that would give rise to greater irritation or deformity.

STAPHYLOMA.

In many instances of those recent staphylomata of young children, which succeed to small-pox and purulent ophthalmia, the growth has been checked, and even the removal accomplished, by producing upon them, and keeping up for a considerable length of time, artificial ulcers by means of the nitrate of silver. When it is found necessary to have recourse to the knife for the removal of the more inveterate forms of this disease, the objects of the operation may be greatly advanced by the subsequent use of this escharotic.

GRANULAR PALPEBRÆ.

This morbid growth of flesh, or warty excrescence, is also the consequence of long continued inflammation, especially of the purulent form, producing by its friction against the cornea not only great irritation, but eventual opacity. The first business of the surgeon when called to a case of protracted ophthalmia, will be to evert the palpebræ, particularly the superior, and in the majority of cases he will at once discover the cause of irritation.

The granulations may be shaven off with a scalpel or the shoulder of a lancet, and the abraded surface touched with a strong solution of the nitrate of silver; or, without any previous excision, the caustic may be applied, and repeated after each sloughing of the eschar, until the granulations have disappeared, care being taken, after each of these applications, to wipe the parts with a sponge, and to drop into the eye some oil of sweet almonds. In this way the immediate removal of the granulations is accomplished, but their recurrence is best prevented, and the tone of the parts restored, by the use of the sulphate of copper, which is to be rubbed every second or third day against the inner side of the granular palpebra until an eschar is produced; a lotion of a weak solution of this

last, or of the nitrate of silver, may accompany this treatment, together with the application of the ointment of the red oxyde of mercury every night to the eye-lids. The muriated tincture of iron has been found very efficacious in this affection, but I am not justified by experience in preferring it to the remedies just mentioned.

ECTROPION.

The morbid thickening of the conjunctiva, which causes the more tractable species of warted palpebræ, may in most instances be removed by producing upon it repeated eschars with the nitrate of silver. In some cases where the surface is so callous as not to be acted upon by this caustic, it will be necessary, preparatorily to its application, to remove with a knife, or the curved scissors, the exuberant conjunctiva. If there exist no contraction of the integuments from loss of substance, these means will seldom fail to restore the lids ad situm. Indeed, when not properly regulated, I have known them to go farther, and produce undue inversion, and puckering of the tarsi.

ENCANTHIS, PTERYGIUM, AND OTHER FLESHY EXCRESCENCES OF THE SCLEROTIC AND CORNEA.

Whenever it may be deemed expedient to remove one or other of these morbid productions by exci-

sion, the subsequent aid of an escharotic may be found necessary, as well for their ultimate destruction, as to restrain the healthy granulations of the wound. For these purposes the nitrate of silver is the safest one that can be employed. There are also several varieties of these affections which this caustic alone, without any previous operation, will effectually remove.

OBSERVATIONS
ON
THE USE
OF
EMETICS OF IPECACUAN
IN MENORRHAGIA.

By JONATHAN OSBORNE, M.B.

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Read July 4, 1826.

ALTHOUGH Frank has mentioned emetics amongst the remedies proper for the treatment of Menorrhagia, and although Denman has stated that in hæmorrhage after abortion medicines have been given expressly for the purpose of producing nausea, "the safest, perhaps, and not least effectual of which is Ipecacuan in small quantities often repeated, so as to keep up a perpetual nausea;" yet as far as I have had opportunities of being acquainted with the usual treatment of cases of Menorrhagia in private practice, emetics are rarely, if ever

employed. In a case lately described in one of the Journals, in which transfusion was performed, it is not mentioned that an emetic was previously resorted to. My attention to the subject was first excited by an article in the 69th vol. of the *Journal General de Medecine*, in which M. Caffin describes cases in which emetics of Ipecacuan were followed by the immediate disappearance of the discharge. Having been witness to a long protracted case, in which most of the ordinary remedies had been employed with but little effect, I determined to avail myself of the first opportunity that should offer of submitting this mode of practice to the test of experience.

In the Institution for the Suppression of Mendicity in this city, in which there are, on the average, above 1200 women, there is a dispensary, but no hospital accommodation. The diet is uniformly a mixture of broth and potatoes, with water for drink. Many of the paupers are greatly exposed to cold, especially in their feet from want of shoes and stockings; and in general their clothing and lodging, not entering within the immediate object of the institution to relieve, are miserable to a degree that is seldom witnessed elsewhere.

Menorrhagia is necessarily of frequent occurrence amongst women so circumstanced. Except in cases of febrile disease, which entitles them to be admitted

into the Fever Hospital, the only improvement in their condition within our power to effect was a short remission from their ordinary labour. Any success, therefore, attending medical practice amongst them must be almost exclusively attributed to the remedy employed.

I began the use of Ipecacuan by ordering a scruple to be taken as an emetic at night, and I generally directed an acidulous saline purgative to be administered the following morning. The effect produced exceeded my most sanguine expectations. The discharge either ceased within twenty-four hours, or was so much diminished that no more remedies were necessary to insure its entire removal. In some few cases it recurred within a short time, but when this did happen, it was only necessary to repeat the emetic once or twice in order to produce a permanent effect. I met with a few individuals in whom the discharge continued with little alteration after the first emetic, but with these I had only to repeat the remedy on the following night; and in one case alone three emetics were taken before the desired effect was produced.

It appeared to me needless to detail cases which presented no topic of interest except that which forms the immediate subject of this paper; but since a learned member of the Association suggested to me that it would be desirable to record some cases, by way of illustration, I have taken

notes of the following, the last three of which are the only cases of Menorrhagia that I met with in Sir P. Dun's Hospital since the commencement of my attendance in that institution. From Case 1st it appears that Ipecacuan produced the effect without exciting vomiting or purging; and from Cases 2nd and 3rd, that as an emetic it succeeded in removing the discharge after antimonial emetics had failed. All the cases attest its remarkable influence. It will be recollected, that in the last volume of the Transactions of the Association, Dr. Sheridan related some interesting cases of hæmatemesis cured by emetics of Ipecacuan. Its effect in Menorrhagia shews that its influence in stopping hæmorrhage is by no means confined to the viscus on which it primarily acts; but whether this is due to the well known consent between the stomach and uterine system, or whether it is owing to an effect produced on the entire vascular system, is a question which cannot be determined till it has been sufficiently tried in all the other hæmorrhages. It acts no less in Menorrhagia, accompanied by high excitement and full pulse, than in states of great exhaustion, as will appear from a comparison of Cases 3rd and 5th; and its general operation is so mild as to present no obstacle to its use, even in cases of the greatest prostration of strength.

CASES.

CASE I.

Nov. 16, 1825. Mary Edmonston, æt. 28, married, has had children. Last catamenia two months ago. A few days ago was seized with rigors on receiving an account which rendered it probable that her husband was lost at sea. A profuse Menorrhagia has continued now nearly forty-eight hours. Pulse frequent, strong, and wiry; tongue coated; no appetite; abdomen free from pain on pressure.

Ipecacuan. scrup. pro emetico statim.

Mist. acid. c̄ sulph. mag. cras mane.

17th. Discharge has nearly disappeared, although the Ipecacuan produced only a slight nausea, and the bowels have been confined since she took it.

Elect. of jalap and supertart. of potass till it operates.

18th. Is now quite recovered.

CASE II.

Dec. 30, 1826. Elizabeth Burns, æt. 25, unmarried. Breathing laborious; tongue loaded;—some headach. Menorrhagia has continued since yesterday, when she received a sudden shock. Has suffered from severe dyspnœa and cough during the last week. Catamenia occurred a fortnight ago at the usual period. Pulse weak and frequent.

Solution of tartar emetic to be taken till full vomiting is produced.

Evening. Oppression of breathing has increased to an alarming degree. Menorrhagia continues unabated.

Mitt. e brach. sanguinis $\frac{3}{4}$ xiv. Vesicat. sterno.

31st. Some relief was experienced at first from the bleeding, but in a short time the dyspnœa returned as before, and towards morning the Menorrhagia became profuse. Pulse 120, small and thready. Bowels repeatedly freed. Being now sufficiently satisfied that the discharge was increasing her state of exhaustion without producing any benefit to the pectoral affection, I ordered the

Ipecacuan emetic.

Evening. Emetic operated well. About half an hour afterwards the discharge was observed to diminish, and it has now almost entirely ceased. A general perspiration has broken out, and the dyspnoea is greatly relieved.

Jan. 1, 1826. Discharge gone. She subsequently laboured under bronchitis in its severest form; but as Menorrhagia never recurred it is unnecessary to pursue the detail of her case.

CASE III.

Nov. 8, 1826. Mary Whitmore, æt. 29, married. Admitted into Sir P. Dun's Hospital with the usual symptoms of fever. Headach; foul tongue; pulse strong and frequent. Has been ill five days.

Mixture of senna with tartar emetic. Abrad. capill.

9th. She now complains of profuse Menorrhagia, which has continued five days. Head relieved; bowels well freed.

Ipecacuan. scrup. pro emetico statim.

10th. Discharge ceased about a quarter of an hour after the operation of the emetic. Some pectoral oppression; bowels free; pulse as before.

Vesicatorium parvum sterno.

Infus. ros. c̄ sulph. mag.

11th. Pectoral oppression much relieved. Yesterday the discharge returned at four o'clock, and continued in small quantity for about ten minutes. Pulse strong and full.

Cont. inf. ros. c̄ sulph. mag.

13th. Continues to improve. She had her last child about eighteen months ago. Since it has been weaned the menstrual discharge has been regular, and the last accession came on at the usual period.

15th. Convalescent.

CASE IV.

Nov. 24, 1826. Bridget Hart, æt. 23, married. Usual symptoms of fever; tongue loaded; no appetite; pulse frequent and soft; is free from head-ach. Bowels torpid.

Senna Mixture.

25th. Bowels freed. Complains of pains in her joints.

Solution of tartar emetic.

26th. Vomited after taking the solution. She

now for the first time complained of Menorrhagia, which has continued during the last five days, and which abated a little, and that only for a short time, after vomiting yesterday. Pulse strong, not frequent.

Ipecacuan. scrup. pro emetico.

27th. The discharge ceased entirely yesterday evening, shortly after the vomiting produced by the ipecacuan emetic.

Senna mixture.

28th. No return of the discharge. Tongue improving.

29th. Convalescent.

CASE V.

Jan. 1, 1827. Mary Dowd, married, æt. 38. A case of relapsed fever. She fell into a state of low muttering delirium, with feeble undecided pulse. Her head had been shaved, and the nape blistered, and she was taking pills of calomel and opium, with camphor mixture and the carbonate of ammonia, when on the 18th I was informed that Menorrhagia to a considerable degree had come on in the morning. She was at this time in a state of exhaustion, appeared quite unconscious of what had happened, and was unable to speak intelligibly. A scruple of

Ipecacuan was given at two o'clock, and the discharge entirely ceased during the evening. Next day she appeared to be sinking, and it was necessary to give her wine and other cordials. However, in about a week afterwards her state improved, she slept almost constantly, and gradually became convalescent.

OBSERVATIONS
ON
THE PERIPNEUMONIA OF CHILDREN.

By THOMAS CUMING, M. D.,

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LECTURER ON THE PRACTICE OF PHYSIC AT THE SCHOOL
OF MEDICINE, RICHMOND SURGICAL HOSPITAL.

Read, October 2, 1826.

OF the diseases to which children are liable, there are few which are more frequent in their occurrence, or, where the suitable remedies are not promptly applied, more fatal in their termination than inflammatory affections of the chest. The situation which I have held for the last three years, that of Assistant Physician to the Institution for the Diseases of Children in this city, has furnished me with many opportunities of verifying this remark; and I propose in the following pages to make a few observations on the symptoms, pathology, and treatment of a disease, which does not appear to have hitherto

attracted all the attention which its importance demands.

It seems somewhat strange, that in Dr. Underwood's treatise on the Diseases of Children, a work professedly systematic, an affection of such frequent occurrence as the one to which I allude should pass entirely unnoticed. By Mr. Burns it has been concisely alluded to in the chapter in which he treats of Catarrh and Bronchitis. Dr. Hamilton speaks of a similar affection under the title of Catarrhal Fever; and Dr. Hastings, in his excellent treatise on the Inflammation of the Mucous Membrane of the Lungs, has given a more extended description of the disease as his fourth variety of Bronchitis Acuta. At the conclusion of his Pathology of the Mucous Membrane of the Larynx and Trachea, Dr. Cheyne has published some admirable remarks upon what he styles the Epidemic Peripneumony of Children, which appears in fact to be one and the same disease with that which is to form the subject of the following observations.

In the dissections, however, reported both by Hastings and Cheyne, the morbid appearances were chiefly confined to the lining membrane of the bronchia, whereas in almost every fatal case of the affection which I have witnessed, the parenchymatous and mucous tissues seemed to have been equally the seat of inflammatory action.

This disease occurs in children of all ages, from a few days old up to eight or nine years. The most frequent subjects of its attack, however, are children between nine months and two years. One cause of its greater frequency at this than at any other period may be the circumstance of its being the period of dentition, a season during which the infant system is in a state of peculiar susceptibility, and disposed to be powerfully influenced by the slightest causes of irritation. When the disease has occurred in children above two years, I have observed that it was generally as a sequela of measles, or as a complication with hooping cough.

In some instances it commences suddenly, and without any assignable cause. It has sometimes happened that the child has gone to bed in perfect health, and risen next morning with all the symptoms of the disease distinctly marked. Such cases, however, are rare. In general a trifling cough, with other slight symptoms of catarrh, precedes by a day or two the complete formation of the disease. When fully formed, the symptoms by which the disease is characterized are a hurried, laborious, and wheezing respiration; a frequent, short, and dry cough, and a greater or less degree of fever. With the fever are combined an extreme degree of restlessness and impatience, moaning, starting out of sleep, and aversion to be moved. The countenance, though occasionally flushed, is for the most part

extremely pallid, sometimes sallow; and as the disease advances it frequently assumes a mottled livid hue, and becomes in some cases swollen and œdematous. When the progress of the malady cannot be stopped, the breathing becomes more hurried and laboured, and the wheezing amounts in many cases to rattling. A state of drowsiness and prostration succeeds to the state of restlessness and pervigilium, which had existed in the beginning; the cough is suspended; the pulse becomes imperceptible; the extremities cold; and in the course of eight or ten days from the commencement of the attack, death generally takes place by suffocation.

With regard to the respiration, the average natural frequency of which in an infant under twelve months is about thirty in the minute, I have frequently observed it to be sixty, seventy-eight, eighty, ninety, and a hundred and two in the minute; and in one case, that of a child six months old, I counted no fewer than one hundred and eighteen inspirations in the minute.

When the respiration comes down from the frequency above-mentioned to fifty-four or forty-eight in the minute, it generally indicates that the disease will terminate in recovery.

In some instances there is an intermission of the

breathing, that is, for three or four inspirations and expirations it will be of natural frequency, then for about the same number it will be double or triple this frequency, and then again it will become as slow as at first.

Although in almost every instance as the disease advances towards its fatal termination, the breathing becomes more and more hurried, I have observed in one or two cases, in which in the beginning the respiration had been excessively hurried, that it fell to near the natural frequency a short time before death.

In addition to its frequency I have mentioned that the breathing is laborious. This state of the respiration is abundantly evident from the heaving of the chest, and the alternate dilatation and contraction of the *alæ nasi*, symptoms which are never absent when the breathing is much oppressed. In some instances, towards the close of the disease, the head is violently retracted, while the lower jaw is depressed at each inspiration, and the patient lies for a considerable time with his mouth open and gasping for breath before death puts a period to his sufferings.

The respiration, though generally wheezing, is not always so. In some cases there is no wheezing at any period of the disease, and in others, though

the breathing is loud and audible, the sound seems to proceed rather from some impediment offered to the air in its passage through the nostrils, than from mucous accumulation in the bronchia. It is difficult by description to convey an accurate idea of the sound to which I allude. I would call it a *dry* sound, in contradistinction to the other, which may be termed *humid*. It seems to be owing to a straitening of the air passages, occasioned by the inflammatory turgescence of the membrane by which they are lined. When secretion takes place, this turgescence is in a great degree removed, and then the sound, from being dry, becomes moist and wheezing.

In some instances the sound emitted in respiration seems to be a compound of the two sounds already mentioned, and to proceed, partly from nasal, and partly from bronchial obstruction. In the great majority of instances, however, the sound is distinctly wheezing, varying in degree from that of simple crepitus up to the loud and mucous rattle.*

* The sound here described, though in most cases abundantly evident to the naked ear, is heard with much more distinctness when we have recourse to the employment of the stethoscope. By means of this instrument we are also enabled to ascertain whether the inflammation is confined to the mucous membrane; for when the substance of the lung is affected, this is sufficiently indicated by the indistinctness or absence of the respiratory

The cough, which is generally short and dry, is for the most part frequent at the commencement, becomes less so as the disease advances, and towards the close it is occasionally suspended altogether. A return of the cough, after it has been for some time suspended, is always to be considered as a favourable symptom.

In some instances in which there is reason to suspect a complication with croup, the cough is suppressed ; in others it is hoarse, stridulous, and ringing, and attended with shrill and crowing inspirations. In some cases the cough seems to be attended with pain, as is indicated by the expression of the countenance, and the child's crying piteously whenever it makes a forced expiration. In infants on the breast, when expectoration takes place, unless the phlegm be rejected from the mouth along with the contents of the stomach, it is generally swallowed. In children, however, of more advanced age, expectoration takes place as in adults. In those, therefore, when the disease is on the de-

murmur in that portion which is the seat of disease. If in the exposition which I have given of the symptoms of this disease I have not mentioned the stethoscope, my omitting to do so has not arisen from any want of confidence in the indications afforded by this instrument, the value of which I can duly appreciate, but solely because I have not yet attained to that precision in its use which would justify me in speaking of it as a mean of diagnosis.

cine, the cough becomes loose, and is attended with the rejection of mucus.

I am not aware that there is any disease of childhood which is attended with a higher degree of fever than the one I am now considering. Intense heat of skin, dryness of the lips and nostrils, loaded white tongue, excessive thirst, and a pulse from 168 to 200, have been present in many instances; and to these symptoms, as I have already mentioned, have been superadded restlessness and jactitation, with moaning and starting out of sleep. In some cases the child can only be tranquillized by being carried about in his nurse's arms. As soon as he is laid on her knee, or in his cradle, the restlessness and crying will return, and continue until he is again put in motion. By merely looking at the child I have frequently set him a crying, and in this way have been prevented from ascertaining what I was most anxious about, the state of the respiration.

In the commencement of the disease the pulse is for the most part hard, and sometimes full; during its progress it becomes more feeble, and towards the close it is generally imperceptible. By simply grasping the hand I have often been able to ascertain the force and frequency of the circulation, a pulse being felt in every finger.

In some instances the fingers are constantly and impatiently thrust into the mouth, which is hot and dry; and as the fatal termination approaches, its mucous membrane becomes more or less of a livid hue, corresponding with the lividity of the face.

Though the stomach is occasionally irritable in the beginning of the disease, it is remarkable with what difficulty vomiting is excited towards the close. Indeed, so great is the insensibility of the stomach a short time before the fatal termination, that I have repeatedly administered the strongest emetic medicines, and in the largest quantities, without effect. This insensibility to the action of emetics has also been observed in the advanced stages of croup;* and I believe the insensibility is not confined to the mucous surfaces, it extends more or less to every part of the body, but particularly to the skin, where we frequently fail in exciting inflammation by the application of a blister.

In some cases the bowels are obstinately confined; in others there is diarrhœa, with thin, green, and slimy stools. The stools are occasionally lumpy and black, sometimes whitish.

* Speaking of croup, Dr. Cheyne remarks: "The want of irritability when the disease is far advanced, is sometimes so great, that I have known a child take six or eight grains of tartarized antimony without vomiting."—*Pathology of the Membrane of the Larynx and Trachea*, p. 60.

I have mentioned that the countenance, though for the most part pallid, becomes more or less of a livid hue as the disease advances. The lividity is most remarkable in the lips and cheeks, but sometimes the palpebræ display a purplish, arborescent appearance, and the veins of the forehead are turgid with blood.

For so far I have described the symptoms in their progress to a fatal termination. When an opposite event takes place, and the disease terminates favourably, the cough (except in the case of its return after a temporary suspension) becomes less frequent, and more loose-sounding; the breathing less hurried and wheezing; the fever subsides; the countenance resumes its healthy hue and expression, and a state of sound and refreshing sleep succeeds to the previous pervigilium and inquietude. The fever always continues so long as there is any considerable affection of the respiration. Sometimes the fever and cough continue for a while after the breathing has become natural, and sometimes the cough alone continues, and is principally troublesome at night. In some instances the cough is only excited when the child cries or is vexed, and then it is apt to occur in paroxysms, bearing somewhat of a resemblance to whooping cough.

I have not observed that any critical evacuation, either by sweat or otherwise, has attended the sub-

sidence of the symptoms. When convalescence is likely to take place, the discharges from the bowels, which are green and slimy, and otherwise of an unhealthy appearance, become, in general, natural.

With regard to the duration of this disease, when an unfavourable event takes place, it is generally upon the eighth or tenth day. When the case terminates in recovery, the disease is seldom prolonged beyond a week. In most instances the convalescence can be dated from the fifth, sixth, or seventh day. Sometimes after the acute symptoms have subsided, more or less of cough, with wheezing respiration, will remain, and continue perhaps for weeks, the disease thus passing into the state of chronic bronchitis.

When chronic bronchitis is of long continuance the expectoration becomes purulent; emaciation, with hectic fever, not unfrequently sets in, and the little patient dies, labouring under many of the symptoms of phthisis pulmonalis. On opening the body, however, we find that the disease exists principally in the mucous membrane, the substance of the lungs being for the most part unaffected, at least altogether destitute of any thing like tubercular disorganization.

Though occurring at every season of the year, this disease is much more prevalent in the winter

and spring than at any other. In the winter of 1824 it seemed to prevail as an epidemic amongst the children of the poor in Dublin. About every third child who was admitted at the Institution may be said to have laboured under it in some form or degree.*

In some cases this disease cannot be traced to any cause. In most instances, however, there is good ground for attributing it to the application of cold or moisture, or of both combined. In many cases which occurred in the winter of 1824, and the succeeding spring, the disease was evidently excited by the measles, which happened at that period to be unusually prevalent and severe.

There can be no doubt that this variety of pulmonary inflammation is much more frequently met with amongst the children of the poor than of the rich; and the cause of this difference I am inclined to attribute to the wretched manner in which the former are for the most part clothed and lodged, in consequence of which they are subjected to many inclemencies of the weather, from which the latter,

* "Every winter," Dr. Cheyne remarks, "this complaint has appeared among the children of this neighbourhood (meaning Leith). I think I have not seen so much of any disease for the last nine years. In the winters of 1802, 3, 4, I had seldom fewer than twenty or thirty cases under my care."—*Pathology of the Membrane of the Larynx and Bronchia*, p. 187.

by a more propitious fortune, are exempted. Where the disease succeeds to measles I believe it may in many instances be attributed to the pernicious administration of ardent spirits, a practice to which the poor almost constantly resort, for the purpose, as they say, “of driving out the eruption from the heart.”

On opening the bodies of those who have died of this disease, in a very few instances the pleuræ have evinced traces of inflammation, as indicated by the effusion of lymph and serum, membranous adhesions, &c,

In two instances in which I had an opportunity of examining the body after death, the lungs were thickly studded with small grey tubercles; and in another the exterior part of either lung contained a number of tubercles, several of which were in a state of suppuration. In the two cases in which the lungs were tuberculated, a general tubercular diathesis seems to have pervaded the system, as was indicated by the existence of tubercles in the peritoneum and pleura. In one of these cases the spleen was as thickly studded with tubercles as the lungs, and in both the mesenteric and bronchial glands were enlarged.

The morbid appearance most frequently met with is an increase in the solidity of the lung, vary-

ing in degree from that of the slightest sanguineous congestion up to complete hepatization. This increase of solidity or induration is not equally great in every part of the lung. The inferior and posterior portion of the lung is in general the part principally affected; and it frequently happens that, while the upper portion is in a healthy state, or merely a little more congested than natural, the inferior portion is completely hepatized. It would appear as if the morbid process, commencing in the lower part of the lung, had completed its course there before the superior portion had advanced beyond the stage of sanguineous congestion. By hepatization I mean that state of the lung which is characterized by a purplish red colour externally, a bright red colour and granular appearance when the lung is incised, and a total absence of crepitus, the lung feeling firm and solid, and sinking in water. This state corresponds with the second degree of inflammation of the lung, as described by Laennec. The first degree of inflammation, according to the same author, is the state of sanguineous congestion above mentioned. Laennec's third degree of inflammation, or that which is characterized by a purulent infiltration of the lung, I have not had an opportunity of observing. When the first degree of inflammation, or that of sanguineous congestion, prevails, it is generally combined with more or less of serous effusion into the interlobular tissue of the lung; but where the lung is hepatized its section

appears dry and granular, and very little serous, or any other kind of effusion, escapes.

Although an increase in the solidity of the lung is the morbid appearance most frequently, indeed constantly observed, yet along with this, in almost every case, is combined more or less of inflammation of the mucous membrane of the bronchia. In some cases the inflammation extends to the trachea, the mucous membrane of which is more vascular than natural, and smeared with a tenacious mucus. In a few instances which fell under my observation, the trachea and bronchia were both highly inflamed, (two were cases of genuine croup), and contained a considerable quantity of purulent mucus. Where the bronchia and air cells are filled with mucus, the lungs collapse imperfectly, and nearly fill the corresponding cavities of the chest. In two cases in which no trace of inflammation could be detected in the trachea or bronchia, the air-cells were filled with a purulent mucus, which exuded in abundance on making a section of the lung. In only one case, and that was a case of pertussis, combined with inflammation of the substance of the lungs, which terminated fatally by convulsions, was the mucous membrane of the trachea, bronchia, and air-cells perfectly free from apparent disease.

The more intense the inflammation of the mucous membrane, and the more considerable the effusion

into the bronchia, the less in general is the induration of the lung, and *vice versá*. In the cases of tubercular disease above mentioned, the tubercles co-existed with induration of the substance, and inflammation of the mucous membrane of the lungs.

With regard to the abdominal viscera, besides the enlargement of the mesenteric glands, and tubercular depositions in the peritoneum, already alluded to, in some instances I have found the liver unusually pale, in others it has been in a state of sanguineous congestion, enlarged, and adherent to the parietes. In one case its surface presented a number of dun-coloured patches, which penetrated for some way into its substance. The spleen adhered in one instance to the peritoneum; in another the stomach was unusually contracted; and in two cases the small intestines were more vascular than natural, and displayed a number of intus-susceptions.

In three instances in which I examined the head, I found effusion of serum in the ventricles, and in the basis of the skull; but these were cases of hydrocephalus supervening upon Peripneumonia, which in two of the patients was complicated with hooping cough.

From what has been stated it is evident that the

foregoing affection is a combination of bronchitis with Peripneumonia, or what by some authors has been called a Catarrhal Peripneumony. As the disease is preceded in most instances by symptoms of catarrh, it is probable that the inflammation, commencing in the mucous membrane, is propagated from thence to the substance of the lungs; and in those instances in which lymph and adhesions were observed on the pleuræ, I conceive the inflammation to have been so intense as to have involved all the tissues of the lung, either progressively, or simultaneously.

The danger in this disease is always proportioned to the violence of the symptoms, and the length of time that may have elapsed previously to its having been subjected to treatment. The more intense the fever, the more hurried, laborious, and wheezing the respiration, and the greater the inability to expectorate the mucus accumulated in the bronchia, the more unfavourable the prognosis, and *vice versâ*. When lividity of the countenance with coma, and a weak, rapid, and intermitting pulse set in, the event is almost uniformly fatal. On the contrary, when the breathing is not very difficult, and the cough not severe; when the expectoration is copious and free, and affords relief; the pulse regular and firm, and the strength not much reduced, we may look forward to the recovery of our patient with confidence. A return of the

cough after its temporary suspension is, in general, to be considered as a favourable symptom. Should more than four days have passed before the employment of remedies, the patient's chance of recovery will be considerably diminished. In almost all the fatal cases that I have witnessed, the symptoms had been of some days' duration before application was made for relief. Indeed I know of no disease which is more invariably fatal, should there be neglect or mismanagement at the outset, than the one I am now considering. It is consolatory, however, to think, that provided an appropriate treatment be instituted early and with vigour, the practitioner will meet with few which are more under the control of art. When this affection occurs idiopathically it is, in general, much more easy of removal than when it is observed as a sequela of measles, or as a complication with hooping cough.

From the appearances presented on dissection it would appear that death, when it occurs, is to be attributed either to suffocation, occasioned by the accumulation of fluids in the bronchia, or to that indurated state of the substance of the lungs by which they are rendered totally impermeable to the air. While the one effect is owing to the effusion of mucus or pus into the air-cells, the other seems to be the consequence of an effusion of lymph into the cellular membrane that connects the air-cells.

It would seem, therefore, to follow, that in the treatment of this disease the object to be had in view is three-fold; 1st, to arrest the inflammation before it has proceeded to the length of effusion; 2dly, where effusion has taken place, to prevent as much as possible its increase; 3dly, to adopt such measures as may tend to promote its absorption or expectoration.

To accomplish the first object, the most powerful remedy we possess is blood-letting; and provided the disease be seen at its very commencement, we may not unfrequently extinguish it in its birth. In this early stage the breathing is loud and distinctly audible; it is not wheezing, the former sound arising from the straitening of the air passages, occasioned by the turgid state of their mucous membrane. It rarely, however, happens that our assistance is required before a certain degree of effusion has taken place, as is evinced by the wheezing of the respiration. We can seldom, therefore, expect to conduct the disease to a favourable termination, except through the medium of a free expectoration, which is, indeed, the most usual way by which the inflammation of the bronchial membrane, or of the substance of the lungs, resolves itself. When effusion has taken place, provided it be not in excess, and the strength be but little reduced, it is to be considered as a favourable symptom; and while we adopt measures for the

promotion of its absorption or expectoration, we shall be most likely to prevent its further increase by resolving, as soon as possible, the inflammation on which it depends.

It is a great, though I fear a prevalent mistake amongst medical men to suppose, that the diseases of children are so frequently dependent upon dentition, or some disordered state of the stomach and bowels, as seldom to require the employment of the lancet. As far as my experience goes, a very considerable number of the ailments to which children are liable, are more or less of an inflammatory nature; and if the morbid process be not speedily arrested it very frequently runs on to irremediable disorganization. It is as great a mistake to suppose that children do not bear bleeding well, as that the diseases to which they are liable do not require it. Where no peculiar delicacy of constitution was manifest, I have found children to bear blood-letting as well as adults; and I can speak from pretty extensive experience when I say, that there is no disease which more imperatively demands the employment of the lancet than the pulmonary affection in question. Amongst the most conspicuous of the objectors to blood-letting in the diseases of children, is Dr. Hamilton, the present Professor of Midwifery in the University of Edinburgh. "Bleeding," says he, "by means of leeches [and I take it

for granted that he equally condemns V. S.] which some recommend in this [meaning the catarrhal fever] and other febrile affections of infancy, is according to my experience most injurious. In some cases it very quickly sinks the strength, and in others it occasions a shock to the constitution, from which the individual never recovers.”* I have had no experience myself of the evil effects attributed by Dr. Hamilton to the employment of V. S. in the diseases of children; and in addition to what I have already said, I would adduce the testimony of Sydenham, who, in speaking on the same subject, makes use of the following words. “Nor need any one be surprised at my bleeding young children, since as far as I have been able hitherto to observe, it may be as safely performed in them as in grown persons; and indeed it is so necessary in the Peripneumonic Fever above-mentioned, and in some other disorders to which children are subject, that there is no curing them without it.”†

The earlier the blood-letting is performed the less occasion in general will there be for its repetition. When the symptoms return after the first bleeding, we must have recourse to it a second, a third, or even a fourth time, if necessary. The quantity of

* See “Hints for the Treatment of the Principal Diseases of Infancy and Childhood,” p. 84.

† See “Account of the Measles of the year 1670.”

blood to be withdrawn at each time must depend upon the age and constitution of the patient, the violence of the disease, and the impression that may have been made by the previous treatment on the symptoms. In general from two to three ounces in an infant between six and twenty months will be sufficient. In a child about two years of age from three to four ounces may be abstracted ; and when the age is above four, about five, six, or eight ounces may be drawn, according to circumstances. In an infant under six months, though general blood-letting may often be required, the application of three or four leeches to the back of the hand or foot will for the most part answer the purpose where a vein, which is frequently the case, cannot be found. It is better to apply the leeches to the hand or foot than to the thorax, for when they are applied in the latter situation, it is difficult to stop the bleeding after they have fallen off ; and instances have occurred in which a fatal hæmorrhage has been the consequence of a continual oozing from four or five leech-bites. When they are applied to the hands or feet, the bleeding can be easily stopped by placing compresses of lint over the bites, and securing them, as after the operation of V. S., by a bandage. As far as my observation goes, leeches applied to the extremities are nearly as efficacious in removing local inflammation in infants, as when applied in the vicinity of the part affected. They seem to produce the effect of a general blood-letting, as the face and

lips become pale, the pulse falters, and syncope occasionally takes place, followed by vomiting. These effects are apt to be produced when general V. S. is carried to a considerable extent, and sometimes a state of nervous agitation and general commotion is induced, which, if not speedily removed, may terminate in death. The best remedies in a case of this kind are the horizontal position, cool air, and a drop or two of the tincture of opium.

Inflammatory as this affection certainly is, I have seldom seen the blood in it, or in any of the other diseases of children, distinctly buffed or cupped. In general the serum is but little disposed to separate from the coagulum, and the whole mass very much resembles that which has been taken from adults affected with continued fever. When blood could not be procured from a vein in the arm, I have frequently obtained it from one in the back of the hand; and when we fail in this also, it can always be procured, and in a very short time, from the jugular.

However useful, and indeed indispensable, blood-letting may be in the beginning of this disease, there is a point beyond which it cannot be ventured on but with hazard. When an abundant effusion has taken place into the bronchia, and when, as generally happens, this state is combined with more or less of collapse of the system, the abstraction

of even a very trifling quantity of blood might be attended with a fatal prostration. In this stage of the disease the patient's only chance of recovery depends upon the freedom and copiousness of his expectoration. We must therefore husband the strength, and adopt every mean which may have a tendency to support the vigour of the system during the severe and frequently protracted struggle by which nature endeavours to get rid of the fluids accumulated in the bronchia.

In those cases in which general V. S. might appear hazardous, we may occasionally have recourse to local blood-letting with benefit. Still, however, if the debility be great, there is a risk that even the topical detraction of blood may not be unattended by danger. In such cases we must place our principal reliance upon the application of blisters, and such other measures as I shall mention presently. But when the symptoms have proceeded to this length, it too seldom happens that any remedy will be efficacious; and it cannot be too strongly impressed upon our minds, that if the disease has been uninfluenced by treatment in its first stage, little else will remain for the practitioner than to witness its resistless march to a fatal termination in the second.

As auxiliary to blood-letting, both general and topical, the best effect is frequently obtained from

the employment of other evacuants, particularly purgatives and emetics.

It is in the early stage of the disease, previous to the occurrence of much effusion, that purgatives will be found most serviceable. When administered at this period, they seem to contribute to the removal of the inflammation, not only by evacuating the bowels of any accumulation that may have taken place in them, but by restoring the secretions, and increasing the serous discharge from the lining membrane of the intestines. By increasing the determination to the intestines, some have supposed that they necessarily lessen the determination to the lungs; and this, therefore, may be another way in which purgatives prove beneficial in the pulmonary affection under consideration. When the inflammation of the lungs is combined with disease in the abdominal viscera, as for instance, hepatic disease, purgatives are of eminent utility, particularly mercurial ones.

Of purgatives, however, as well as of blood-letting, it may be said, that there is a period beyond which their use cannot be persisted in but with hazard. When the bronchia are oppressed with effusion, and the powers of the system are much sunk, the administration of a purgative might produce the same effect as blood-letting. It is in the first stage of the disease, or that which elapses pre-

vious to the occurrence of much effusion or collapse, that benefit is to be principally expected from purgatives. The purgative I am in the habit of using is a combination of calomel with jalap, the quantity being proportioned to the age of the patient, and repeated at intervals until due evacuations are procured. To a child between six and twenty months we may give a grain of calomel, with four or five of jalap, and one of ginger, for a dose. When the bowels have been well opened by the above, I generally keep up their action by administering a grain of ipecacuanha with one of calomel every second, third, or fourth hour, according to circumstances. This combination not unfrequently excites vomiting, as well as catharsis; and when this effect is produced, it is generally of service to the patient.

When the lungs are much oppressed I have often observed the greatest relief to follow the administration of an antimonial emetic. In the pulmonary affections of children an antimonial emetic seems to act in various ways. In the beginning of the disease, when the breathing is oppressed from congestion, it seems to be beneficial by restoring the balance of the circulation, and causing a determination of the fluids from the interior to the surface. In a more advanced stage of the disease, when mucus has accumulated in the air passages, it has the effect of assisting in its expulsion during the act of vomiting, and at all periods it may be more or

less serviceable from its action on the bowels and skin. To a child under twelve months I generally give about the eighth of a grain of tartar emetic in solution, every ten minutes, until vomiting is excited. In the advanced stage of the disease such a degree of insensibility to the action of emetics often prevails, that I have known the largest doses of tartar emetic, combined with ipecacuanha, fail to produce any effect. Though Dr. John Clarke* is so apprehensive of the employment of antimonials in the diseases of children, as far as my observation goes, I think his fears are in a great degree unfounded. I have used tartar emetic in many of the acute affections of children, and even of infants; and though I have repeatedly observed its good effects, I do not recollect a case in which I had occasion to regret its employment.†

The preceding remedies having been used, a blister should be applied to the chest, or between the shoulders; and when both chest and shoulders had been blistered, I have known good effects to

* See "Commentaries on some of the most important Diseases of Children."

† In the Peripneumonia of adults I have known the best effects to follow the administration of tartar emetic in large doses, as recommended by Laennec and other continental physicians. As the remedy however, when so used, not unfrequently proves harsh and violent in its operation, I have been unwilling to employ it in the Peripneumonia of Children, except in the dose and manner above mentioned.

follow the application of a blister to either side. In applying blisters to infants we must take particular care not to allow them to remain on for more than three or four hours. When a blister is applied for a longer period, excessive general irritation is apt to be induced ; and such is the delicacy of the infant skin, that the blistered parts not unfrequently become gangrenous. Under such circumstances the death of the child has been sometimes the consequence. Though vesications may not have formed at the time the blister is removed, they generally take place after the application of the dressing. In some habits the blistered surface takes on an unhealthy action, and runs into eating and irritable ulcers, which are long in healing. In such cases I have found an emollient poultice, when the inflammation is considerable, and afterwards the black and yellow washes, the most useful applications. In infants of an irritable habit it will sometimes be advisable to dilute the blistering plaister with an equal quantity of the *emplastrum ceræ*. My friend and colleague, Dr. Charles Johnson, who has had much experience in the diseases of children, considers this combination preferable in many instances to the *emplastrum cantharidis* of the *Pharmacopæia*.

In the advanced stage of the disease, when the debility is great, and suffocation appears to be impending, our principal reliance must be placed upon the administration of stimulants. Of these, perhaps,

the best is the carbonate of ammonia, which may be given in the dose of three or four grains every third or fourth hour, according to circumstances. The decoction of seneka will form a suitable vehicle for the ammonia, and from the expectorant quality which it seems to possess, it may probably enhance the efficacy of the latter. When the prostration is extreme, wine and other cordials may be had recourse to ; but in general these, as well as the carbonate of ammonia, will prove of little avail, suffocation taking place before the system has recovered strength sufficient for the expulsion of the fluid from the bronchia.

In illustration of what has been advanced in the preceding pages, I subjoin the following cases. When I had the honour of laying these observations before the Association, I submitted, by way of appendix, thirty-two cases, in sixteen of which I had an opportunity of observing the morbid appearances after death ; while in sixteen this opportunity was not afforded in consequence of their terminating in recovery. As the publication, however, of so many cases would swell the paper to an inconvenient size, I shall content myself with the insertion of five of the fatal, and five of the successful cases. The former will tend to illustrate the pathology of this disease ; while the latter will serve as an exemplification of the practice I have recommended for its treatment.

CASE I.

April 1st, 1824. Anthony Fullam, æt. 21 months, Mountrath-street. This boy was seen on the sixth day after the disappearance of the rubeolous eruption. Symptoms: hurried, oppressed, and wheezing respiration, with short cough, unattended by expectoration; countenance and lips pallid, former expressive of much distress; skin hot; pulse frequent and feeble. The disease continued to increase under the employment of blisters, emetics, and carbonate of ammonia with ipecacuanha; and upon the third day after I had first seen him he died.

DISSECTION.

Slight adhesion between the superior lobe of the right lung and parietes. Both lungs, with the exception of a small portion of the anterior part of either, much more solid than natural; solidity greatest towards the back part, where each lung was completely hepatized. Mucous membrane of trachea and bronchia slightly inflamed; bronchia and air-cells filled with a purulent mucus. Slight effusion in the pericardium. Mesenteric glands enlarged.

CASE II.

July 19th, 1824. Stephen Daly, æt. 7 months,

54 New-row. This child had been ailing for four or five weeks. When I saw him the breathing was greatly hurried (being 102 in the minute) and oppressed; there was cough, with considerable fever, and the face and lips were pallid. Blood-letting and blisters failed to procure relief. Next day the breathing was as hurried as before; it was loud, but not wheezing. An emetic was directed, but in vain, as death took place on the third day after I had first seen him.

DISSECTION.

Both lungs, with the exception of a very small portion at the anterior part of either, entirely destitute of the natural spongy structure, and completely hepaticized. Posterior portion of both lungs of a dark purple colour; anterior portion of a lighter colour, and containing a number of small greyish tubercles, several of which were in a state of suppuration. Mucous membrane of trachea and bronchia perfectly healthy, not even smeared with an unusual quantity of mucus. Slight effusion in pericardium. Liver in a state of sanguineous congestion.

CASE III.

Sept. 1st, 1824. Wm. Rafter, æt. 5 months, 48 Plunket-street. When this child became a patient at the Institution, he had frequent short cough, with oc-

casional vomiting. The breathing was laboured, slightly wheezing, but not much hurried, being only 48 in the minute ; there was considerable fever. He was bled to two ounces ; a blister was applied to the chest ; and purgatives were administered at intervals. Next day the fever was unabated ; the cough continued, and the respiration was more hurried. The bleeding was repeated ; a solution of tartar emetic in ipecacuan wine was directed as an emetic, and a blister was applied between the shoulders. His mother neglected to bring him to the Institution on the 3rd. When seen on the 4th, the breathing was greatly laboured, wheezing, and hurried, (being 90 in the minute ;) the cough occurred but seldom ; the countenance was pallid ; the lips of a livid hue ; and the extremities were inclined to be cold, though the heat of the central parts was increased ; the blister rose, but the emetic failed to operate. As this child was not brought back to the Institution, no further means were tried, though he lingered till the morning of the 8th.

DISSECTION.

Only portion of the lungs that possessed the natural spongy structure, the antero-superior part of the upper lobe of left lung. Remainder of both lungs highly inflamed, and converted into a red, fleshy-like substance, parts of which sank in water. Large quantity of white frothy mucus in trachea

and bronchia, which exuded abundantly from the air-cells on making a section of the lungs. Mucous membrane of trachea and bronchia in a slight degree more vascular than natural.

CASE IV.

Dec. 27th, 1824. Elizabeth Ryder, æt. 9 months, 24 Chancery-lane. This child had been five days ill when she was brought to the Institution. The breathing was excessively hurried, laboured, and rattling, attended with motion of the alæ nasi, and considerable fever; the lips were of a pallid hue, and she had frequent short cough, with inability to expectorate. V. S., blisters, antimonial solution, and calomel with ipecacuanha were prescribed. Next day the breathing was excessively laboured, and loudly rattling; very little cough; countenance of a pallid, cadaverous hue, rather bloated; heat of surface considerably diminished; pulse very small; and great restlessness, with rolling of the head, and frequent suppressed moaning.

Vesic. utrique lateri; sol. ant. 2dis horis.

Dec. 29th. Symptoms greatly aggravated; extremities cold, and pulse nearly imperceptible; the emetic had failed to operate. Two grains of the carbonate of ammonia were directed to be taken every third hour. For two days she amended considerably

under this treatment, but on the 1st of January the symptoms returned with all their former severity, and after lingering till the 6th, she died. The difficulty of exciting vomiting by the strongest emetic medicines was very remarkable in this case towards its close.

DISSECTION.

Superior and middle lobes of right lung and upper lobe of left perfectly healthy, with the exception of the postero-inferior portion of each lobe, which was of a redder colour, and considerably more solid than the anterior part of the lung, though not altogether destitute of crepitus. Inferior lobe of each lung of a purplish red colour, in some parts nearly, in others altogether in a state of hepatization. In the antero-superior portion of each inferior lobe, though the congestion was very great, the spongy structure was not entirely wanting. Towards the postero-inferior part, substance of the lung quite solid, sinking in water. On making a section of the lung, slight exudation of purulent mucus from the divided air-cells. Mucous membrane of trachea and bronchia apparently sound.

CASE V.

Mary Dunne, æt. 4 years, Baggot-street. The peripneumonic attack in this case commenced on

the second day of the eruption of measles. The symptoms were the following: respiration hurried, (72 in the minute,) laborious, and towards the close wheezing; cough constant and short, with high fever; excessive restlessness, and starting out of sleep. As the disease advanced, lividity of face, with great insensibility to the action of emetics. Blood-letting, blisters, emetics, and purgatives were had recourse to in vain, death taking place on the 8th day.

DISSECTION.

Lungs did not collapse. Slight effusion of coagulable lymph on pleura of both lungs. Antero-inferior part of the superior lobes of both lungs of the natural colour, and possessing the healthy spongy structure; postero-superior portions of these lobes, as well as the remainder of both lungs, of a dark purplish hue, and though crepitous throughout, less so than natural. On incising the lungs a whitish purulent mucus exuded from the air-cells, and in the congested portion of the lung a considerable quantity of blood escaped from the divided blood-vessels. Trachea and bronchia filled with a whitish purulent mucus, and the lining membrane of both, but particularly of the bronchia, considerably more vascular than natural. About two ounces of serum in the pericardium. A few opaque dun-coloured patches on the surface of the liver. Small

intestine rather more vascular than usual, containing a number of intus-susceptions.

CASE VI.

August 23rd, 1824. Eliza Dolan, æt. 13 months, Baggot-street barracks. This child had been four days ill when I saw her; she had frequent cough, with occasional vomiting; the breathing was slightly oppressed, and attended with considerable fever. She was bled to two ounces, and had a combination of calomel and jalap administered at intervals. Next day the breathing was greatly hurried, (72 in the minute,) laboured, and loudly wheezing; the face was pale, and she lay for the most part in a drowsy state; the vomiting continued, and the bowels had been indifferently acted on. The bleeding was repeated; a blister was applied to the chest, and calomel with scammony, followed by castor oil, was administered as a purgative. On the day after this the breathing had come down to 60 in the minute, was much less laboured, but still distinctly wheezing. A blister was now applied between the shoulders, and small doses of calomel and ipecacuanha were administered every second hour. On the 26th of August, the day after the application of the blister, the breathing had come down to 54 in the minute, and was less wheezing; the fever and cough continued for some time, but at last both sub-

sided ; and on the 30th of August, seven days after I had first seen her, she was reported convalescent.

CASE VII.

Sept. 16th, 1824. John Wilkinson, æt. 10 months, 49 Plunket-street. This child had been three days ill when I first saw him. Symptoms : frequent, short, dry cough, with hurried, wheezing respiration, flushed cheeks, and high fever. Blood-letting, antimonial solution, and a blister were prescribed. Next day, there being no abatement of the symptoms, the blood-letting was repeated ; a purgative was administered, and a blister was applied between the shoulders. The respiration was easier after the V. S., but on the following day it was as hurried, laborious, and wheezing as before, being 78, whilst the pulse was 168 in the minute. Four leeches were now applied to the hand, and a combination of calomel and jalap was given at intervals. The symptoms appearing to be relieved by the leeches, two more were re-applied on the 19th of September. On the 20th the respiration was 66 in the minute, performed with apparent ease, and with hardly any wheezing ; the countenance was much improved, the cheeks had regained their healthy colour, but there was as yet no subsidence of fever. The chest affection having been relieved, the remainder of the treatment consisted in the repeated exhibition of

purgatives; and in the course of a few days the child was convalescent.

Towards the close of this case the blistered surface on the back took on an unhealthy action, running into irregular, whitish-coloured ulcers; and at the same time the wounds that had been made by the lancet and leeches on the hands began to inflame. Under the use of the black wash the sores on the back soon healed, and the points of inflammation on the hands gradually subsided as the child regained his health and strength.

CASE VIII.

Oct. 12th, 1824. Owen Reilly, æt. 14 months, 55 New-row. Three days before I saw this child he was seized suddenly with cough and stuffing. When brought to the Institution he laboured under considerable fever. The breathing was laborious, distinctly wheezing, but not much hurried, and attended with short, dry cough. Mucous membrane of the nostrils dry and inflamed. He was bled to two ounces. The antimonial solution was administered at short intervals to excite vomiting, and the gum over the superior lateral incisor, which seemed to be inflamed and pressed upon, was lanced. The pulmonic symptoms continuing, he was ordered by Dr. Marsh, who saw him next day, to be bled to three ounces,

and a grain of calomel, with one of ipecacuanha, was given every second hour. A blister, which had been applied to the chest, having acted indifferently, he was blistered on either side. On the day subsequent to the second bleeding, the breathing was still much oppressed, and loudly wheezing, though not much hurried; and there was considerable drowsiness, with faint lividity of the lips and cheeks; the cough was less troublesome and looser, but the fever continued unabated. V. S. to two ounces was had recourse to a third time; a blister was applied between the shoulders, and the antimonial solution was again directed to excite vomiting. For five days after this report the child was kept away from the Institution. When he returned on the 20th of October the breathing was natural; the fever had subsided, and he was in every respect free of ailment, with the exception of a slight cough at night, which disappeared in a day or two.

CASE IX.

Oct. 18th, 1824. John Doherty, æt. 16 months, 6 Anglesea-street. The symptoms in this case were short, hard cough; oppressed, slightly hurried, and wheezing respiration; considerable fever, and frequent vomiting. The attack was sudden. The child went to bed well on the evening of the 14th instant, and rose the following morning with the affection of

the chest. Three ounces of blood were drawn from the arm ; a blister was applied to the chest, and two grains of calomel were directed to be taken every second hour until the bowels were acted on. Three doses of calomel lay on the stomach, but some castor oil, which was given to accelerate its operation, was rejected. Next day the breathing was pretty easy, and the noise with which it was attended seemed to proceed rather from nasal than bronchial obstruction. In a few days the child was convalescent.

CASE X.

In the following case, which is the last I shall relate, I was led from peculiar circumstances to pay a closer attention to the march of the symptoms than in any of the preceding ones.

Master T. Y., æt. 6 months, was seized on the 9th of October, 1824, with cough, and oppressed breathing, for which he was bled with leeches on the 10th, and from the arm on the 11th. I saw him for the first time with Mr. Kennedy on the 13th. His countenance was of a pallid, yellow hue, and presented a ghastliness of expression, which startled me not a little on my first entering the room in which he lay. His breathing was hurried, (being 78 in the minute,) slightly laboured, distinctly wheezing, and attended with alternate dilatation and

contraction of the *alæ nasi*; cough frequent and hard; skin pretty cool, after having been very hot through the night; tongue dryish and white; and the evacuations from the bowels, of which he had only one since the preceding evening, of a deep green colour, and slimy.

He was bled to three ounces; a blister was applied to the chest; and powders, consisting of calomel, scammony, and jalap, were directed to be administered at intervals. I visited him at eight o'clock in the evening, at which time the blister had been dressed. I ascertained that from the time he was bled until within half an hour of the time I saw him, he had remained in a tranquil state, breathing easily, sleeping a good deal, and very little affected with cough. When I saw him, however, the hurried and oppressed state of the respiration had returned, but it was by no means so wheezing as it had been in the morning. A short, hard cough occurred every now and then, during which the child made many ineffectual attempts to expectorate and vomit. To these symptoms was added great restlessness, with flinging out of the hands and legs, writhing of the body, and moaning, as if from abdominal pain. He had taken three powders. The first was immediately vomited, but the two last remained in his stomach; and as the bowels were at this time in the act of being moved by the medicine, I conceived that a good deal of the hurried state of

the respiration might be attributed to the general commotion produced by the operation of the purgative. With a view to soothe and tranquillize, I had the child placed up to his hips in warm water, and kept there for a few minutes. While he was in the bath the expression of the countenance became much more composed, and the breathing was less hurried and laboured. When removed from the bath, and laid on his mother's knee, he soon fell asleep, and slept tranquilly for some time. While he was sleeping the respiration, from having been about 80 in the minute, came down to 60, and even to 54, and appeared to be performed with little effort, and without noise. Every now and then he would awake with the short, dry cough, and ineffectual attempts to vomit, which would always produce for some time a considerable acceleration of the breathing, and also render it louder. After the agitation, thus occasioned, had subsided, he would fall asleep again, and breathe as calmly and tranquilly as before. I gave him four tea-spoons full of a mixture of syrup of squills and ipecacuan wine, with a view to excite vomiting, but, though sickness was occasioned, it was necessary to apply a feather to the fauces before the stomach could be made to reject its contents, and even then all that was rejected was a small quantity of tough, glairy mucus. As he was restless and uneasy in consequence of the sickness thus produced, I had him again put into the bath, and it seemed to produce equally good effects

as before. When taken out of the bath he was laid on his side in the cradle, and there I left him asleep, the breathing about 60 in the minute, very slightly wheezing, and, as before, every now and then much accelerated by the cough, or any other cause that produced irritation. On the following morning the breathing was 54, without wheezing, or much effort; cough looser; skin cooler, and a general appearance of amendment. The affection of the chest becoming in a slight degree aggravated, I applied four leeches to the hand, and a blister between the shoulders. Immediately after this all the symptoms subsided, and upon the 18th of October, ten days from the commencement of his illness, he was convalescent.

C A S E
OF
OPEN FORAMEN OVALE
IN AN ADULT.

By JOHN CRAMPTON, M. D.,

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PROFESSOR OF MATERIA MEDICA, AND PHYSICIAN TO STEEVEN'S
HOSPITAL, &c.

Read, April 2, 1827.

THE facilities afforded by the Dublin hospitals for investigating the nature of diseases after death, enable us to collect many curious and important facts, which otherwise must have escaped observation. Indeed the public, and even the lower orders, seem every day to lose those prejudices which were formerly entertained against anatomical examination; thus affording still further opportunities to the physicians in Dublin to advance the science of pathology, and improve the treatment of diseases. In prosecuting one of these inspections, assisted by my friends Dr. W. Beatty, Dr. Townsend, and Mr.

Farange, an unusual and anomalous condition of the heart, as to the communication of the different cavities, was observed. The notes of the case, antecedent to death, were preserved ; I am induced therefore to relate the history of the case, with an account of the appearances after death, accompanied by such remarks as occurred at the time, and which have since suggested themselves to me in reflecting on the case.

James Spellman, æt. 18, was admitted into the Hardwicke Hospital, Feb. 6, 1827, as a fever patient. The thoracic viscera appeared to suffer from inflammation, he had a severe cough, complained of pain in different parts of his chest, chiefly at the left side, expectorated blood, and was distressed in his breathing. After two venesections and other remedies, on the 14th he appeared convalescent. From premature exposure, however, in a ward, which at this season was unusually cold, he soon suffered a relapse. The symptoms which now assailed him were those of acute rheumatism, with which almost all his joints were occupied, being excessively tumid, painful, and accompanied with a high degree of fever. In a few days the swellings of the joints abated, but the rheumatism became metastatic, the pectoral organs being again attacked, more especially the heart, in the region of which he appeared to suffer extremely. The pulse during the first attack of fever had been full and frequent, but regular ; in

the subsequent rheumatic attack it preserved the same character, but as the attending pyrexia appeared to subside, an occasional intermission or irregularity was observed.

It was necessary to adopt a very active practice. Repeated bleedings and other modes of relief were resorted to, otherwise it was obvious his respiratory organs would have been overpowered. It was equally clear that a cold fever ward was not a place suited to his case, which had now become complicated, but of a more chronic character. Indeed the conclusion which I was at this time disposed to adopt, was, that severe organic lesion in the heart and lungs had occurred as the sequela of fever and acute rheumatism in a subject perhaps strongly predisposed to disorder in those important viscera.

On the 27th of February the symptoms were, pain in the region of the heart, severe cough, with a croupy sound, much muco-purulent expectoration, great distress in his breathing. At this time he stated he had for years been occasionally subject to pain in the left side, but particularly after running, or any active exertion ; his pulse extremely rapid, sometimes irregular, countenance pale, feet œdematous. The stethoscope indicated acute bronchitis, with hypertrophy, and disordered action in the heart, the motions of that organ being tumultuous and irregular.

On the 3rd of March the pulse became slower, about 80, but very irregular.

On the 4th he suffered excessive distress in his breathing, or *smothering*, as he expressed it.

On the 5th pulse again so rapid as not to be counted; he complained of great pain in the region of the heart; he was evidently growing worse.

On the 6th a slight amelioration took place; but from this period until the 10th he gradually sunk. On this day he expired.

DISSECTION.

The thoracic cavity was examined on the 12th. On opening it the lungs did not collapse, but the external appearance of this organ was healthy; the parenchymatous tissue exhibited some portions red, congested, and evidently inflamed; the bronchia vascular, and filled with a muco-purulent effusion.

Pericardium contained about two ounces and a half of fluid, in which a considerable quantity of coagulable lymph was seen; inner surface of this membrane not inflamed, but that portion of it which is reflected over the heart showed marks of inflammation in several places; both ventricles were much

enlarged, exhibiting considerable hypertrophy ; the semilunar aortic valves showed recent fleshy or *cauliflower* excrescences attached to all of them. Both the ventricles were quite filled with a dense, white coagulum, firmly attached to their parietes. The commencement of the aorta appeared unusually narrow, in proportion to the heart and to the subject ; that of the pulmonary artery greatly enlarged. The auricles of the heart were also in a state of considerable dilatation : but the circumstance which attracted attention most, was, that the foramen ovale was open ; but the manner of this opening must be more fully described. The septum between the auricles exhibited an oval depression, or attenuated space of about one-third of an inch in diameter, guarded only by a thin membrane ; but at one side it was evidently pervious and open, with a rounded and thickened edge. This membrane acted like a curtain or valve ; when viewed or pressed from the left auricle it was closed, the curtain or membrane pressing close, and overlapping the opening ; viewed from the right auricular cavity, or touched with a probe, it opened, and allowed a free passage, fully as large as a goose's quill, compressed so as to exhibit an elongated or oval section. The blow-pipe exhibited the same difference of a closed or open space, as it was used from the left or right side of the auricular septum.

There was no trace or appearance of inflamma-

tion in the auricular portions of the heart, at least none could be discerned on the inner membrane.

In the cavity of the abdomen there was considerable serous effusion. The villous coat of the stomach appeared red. The cæcum contained a number of small worms. The liver healthy. The gall-bladder infiltrated with serum, so as nearly to fill up its cavity.*

Several suggestions naturally occur to the physiologist in reflecting on this curious deviation from the usual state of the heart in an adult. As observed by Corvisart,† who gives a similar case where the Foramen Ovale was found open in a girl of 17, the blood returning from the veins into the right auricle, is only in part distributed through the pulmonary artery, there to be revived after the losses it has sustained in the general circulation. A portion of it in its black and venous state goes through this preternatural opening into the left auricle, from whence it is prevented from returning by pressing back against, and closing the valvular curtain already described.

* A preparation of a part of the heart, which shows the Foramen Ovale unclosed, is preserved in spirit. It was considered unnecessary to make a drawing, as there is precisely a fac simile in “Bertin, *Traité de Maladies de Cœur*.”

† Classe iv. Art. iii. Sec. 11.

It is needless to dwell upon the effects produced by this dark unrenovated blood ; this fluid, which has not been deprived of what it should lose, circulated through the whole arterial system, and affording an unsuitable pabulum for the different secreting organs, which ought to be supplied with red arterial blood.

It is also easy to understand what tumult and distress must have been felt in the heart and respiratory organs. In the history of his state of health, antecedent to his feverish and inflammatory attack, he dwelt on *pain* in his left side, on his distress in his breathing on making any active exertion. An additional source of trouble must have arisen from the contracted state of the commencement of the aorta. But still it appears that such a state is not incompatible with the continuance of life for eighteen years, as is evinced by this case, and by the one recited by Corvisart, which he cites from Morgagni,* of a girl who lived seventeen years with the heart in the state just described. The same appearance of Open Foramen Ovale has been observed, in addition to Morgagni and Corvisart, by John Hunter, Caillot, Jurine, Louis, and by Bertin, who, in his “*Traité de Maladies de Cœur*,” says he saw three instances of it ; of one of those he gives a plate.

• Letter xvii.

In the case of Spellman the following explanation might perhaps be hazarded. That previous to his feverish and pulmonic attack, the blood returning from the veins, and meeting no obstacle from entering the pulmonary artery, (which, as already observed, was larger than natural,) passed altogether the narrow auricular aperture, and took the easier and wider opening into the pulmonary artery ; the synchronous movements in the left cavities keeping pace with those on the right. The fullness of the left auricle occasioned its contents to close the curtain by pressing from left to right. This exertion was also rendered more powerful by the increased strength of the left ventricle, and the narrowness of the aorta. By this mechanism and procedure the heart was kept in a condition very nearly approaching a natural state, the cross valve only opening occasionally on some sudden struggle, or mental emotion, which might disturb the pulmonary circulation. But when the bronchial membranes became thickened, the bronchia filled up, and the lungs themselves less pervious from inflammation, an obstacle was presented to the free passage of the blood through the branches of the pulmonary artery, a regurgitation took place, the oval curtain was thrown open by pressure from right to left, and the anomalous circulation now took place to a greater extent, and in a more permanent manner. Additional sources of tumult and irregularity must have arisen from the metastatic inflammation of the heart itself, and the sudden development of the fleshy vege-

tations which interfered with the proper action of the semilunar aortic valves. Under the pressure of such aggravated sources of suffering, dyspnœa from congested lungs, a perturbed circulation, effusion into the pericardium, the formation of coagula, which nearly filled both ventricles, (all occurring in succession,) the heart ceased to act, and thus the patient's agonies were at an end.

That an Open Foramen Ovale is oftener to be met with than is supposed, but that this appearance may be overlooked in our examinations after death, I am led to believe from the reports of those who are constantly in the habit of dissecting bodies. I am induced to embrace this opinion from some cases in which I think I could recognise the deviation I have described in the living subject. One of these I shall beg leave to relate.

A young lady of about 19, tall, fair, but delicate-looking, to whom I have been frequently called within the last eight years, is subject occasionally to syncope, to palpitation, and fits of dyspnœa of great urgency; during these the lips and face became purple, and the pulse intermittent. These paroxysms are more severe after catching fresh cold. She was frequently troubled with cough and hoarseness, and was considered consumptive by most of the practitioners who were consulted by her parents. This opinion was grounded chiefly on the circumstance

that she was breathless on the least exertion, and had a constant cough, arising, as they supposed, from a tubercular condition of the lungs. She had, however, intervals of good health, and no appearance of hectic ; there was no hysterical symptom. She suffered extremely from measles about two years since, in which her lungs were much affected, but she afterwards regained her usual state of health. On a close examination I thought I was able to say the lungs were sound, but that the disorder was in the heart, the Foramen Ovale of which appeared to me to be occasionally open, and that the same solution might be given of the asthmatic paroxysms which I have attempted to explain in Spellman's case. My prognosis, which was given several years ago, has been confirmed by time, as she has improved in health, and is able to exert her voice in singing ; but is still subject, though less so than formerly, to the paroxysms described. A sudden emotion, or any cause which impedes the free circulation through the lungs, appears to throw the venous blood into the left side of the heart. Rest and tranquillity of mind and body, an accurate attention to the state of the digestive organs, change of air, avoiding damp and cold, and the choice of a mild, dry climate, in winter, are the curative measures which are adopted ; in some of the severer paroxysms bleeding and other modes of relief were resorted to ; and I am not without hopes that this deranged state of the circulation may ultimately be remedied if she can

escape those causes which have been found to induce and aggravate the paroxysms.

It may be thought paradoxical, perhaps, to say that this uncommon disposition of the heart in Spellman, and in the case to which I have last adverted, may have tended to a useful purpose in preventing a still greater degree of aberration from the healthy state. The additional passage to the left heart, by diminishing congestion in the lungs in a person predisposed to consumption, might have averted a phthisical termination; or by affording an easier return to the venous blood from the head, might have prevented an apoplectic seizure, or a paralytic attack in a patient otherwise liable to such an occurrence. In many instances Nature thus, by unusual and anomalous arrangements, provides against still greater evils, and what at first sight might appear to be a blunder, is in fact a most ingenious contrivance to remedy an error of more importance.

Spellman's case is instructive in other points of view; it illustrates the effects of the rapid succession of fever, of bronchitis, and of acute rheumatism in its metastatic form, fixing on the heart, deranging and destroying an organ already imperfect, and after death exhibiting those changes which were obviously pointed out by the previous symptoms. But it is needless to expatiate on subjects already

so well known, and on appearances so familiar to all those who are conversant in the observation and treatment of diseases.

Since this paper was read, the conjecture which I have offered, that an Open Foramen Ovale is not so very uncommon an occurrence has been verified, as another instance of it at a still more advanced period of life was observed.

A patient, æt. 34, was admitted into No. 2 ward, Whitworth Hospital, April 9, 1827. The symptoms on admission were, excessive dyspnœa, or rather orthopnœa, violent palpitations, tremulous motion of the jugulars, face pale and dingy, lips and nails of a dark leaden colour, ancles œdematous. He survived but a short time, having died on the 22nd; and on examination after death, in addition to tuberculated and hepatized lungs on both sides, and a large cavernous excavation in the left lung, the Foramen Ovale was unclosed; but the valve, as in the other case, overlapped and protected the aperture, so that no blood was likely to pass, unless the contracting power of one side of the heart prevailed over that of the other. There was no appearance of any such preponderance under ordinary circumstances, for the heart was sound, and in due proportion in all its parts. But when any impediment occurred

on either side, the current might take the passage where the overlapping curtain was so easily removed. The distressing palpitations and the colour of his lips and nails might lead one to adopt this opinion. The curtain was more readily pushed aside from right to left, as in the preceding case, and as one might reasonably conclude, in the direction opposite to that where there were obstacles preventing a free circulation through the lungs, arising from their tuberculated and hepatized condition. The same reasonings proposed in Spellman's case might be advanced, and the same conjecture hazarded, that life was perhaps prolonged by this anomalous mechanism. The progress of tubercles towards supuration and destruction of the lungs might have been slower than if the whole force of the circulation from the right side of the heart had been constantly exerted on the lungs, the blood occasionally taking the devious path already described. In this way the unsound lungs were allowed to perform their functions for thirty-four years; Nature thus, as observed before, compensating in some degree for the imperfection by an unusual and extraordinary arrangement.

A CASE
OF
EXTIRPATION OF AN UNUSUALLY LARGE
STEATOMATOUS TUMOR
FROM THE NECK.

BY PATRICK DALY, M. D.,

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Read, Nov. 6, 1826.

THE unusually great size of the Tumor, considering its nature, as well as the extent and danger of its situation and connexions, induce me to think that the following detail of the circumstances attending its successful removal may not prove unacceptable to the profession.

The subject of the operation was Michael Legge, aged 27, residing in the parish of Ballin-garry, near this town, of a vigorous, athletic constitution, and accustomed to the laborious occupations of a farmer.

About thirteen years ago, after a severe pulling of the right ear, and pressure of the thumb behind the angle of the jaw, one of the lymphatic glands situated there became inflamed, and formed a tumor. It was not, for a few days, attended with much pain, and was entirely neglected during several years, though it increased slowly. About seven years ago he first applied for advice, since which time he in vain consulted several respectable practitioners, none of whom would venture on an operation ; but some recommended the use of various stimulating applications for the purpose of dispersing it.

Sixtén months ago he was examined at a county infirmary, at which period the Tumor had not attained half its present size. After a consultation had been held on his case by five professional gentlemen, it was considered not advisable to attempt an operation. Shortly after his return home, while sparring with a fellow labourer, he received a blow on the Tumor which produced violent inflammation. Fomentations and warm poultices were applied, which not being productive of any relief, but, on the contrary, being found to increase his sufferings, were of course discontinued.

From this period, and during the space of a year, it grew to double its previous size, and though it had been hitherto but little sensible on pressure, and had produced no inconvenience except occa-

sional shooting pains during changes of the weather, and slight head-aches, more alarming symptoms, such as great pain, dyspnœa, and sense of suffocation ensued, as the Tumor grew and protruded into the fauces.

Being about this period on a visit in his neighbourhood, I accidentally met with him, and, after a careful examination of the Tumor, was of opinion that its removal might be safely effected. The patient having cheerfully agreed to an operation, for that purpose followed me in a few days to where I then resided. I fortunately obtained the assistance of Surgeon Gibbons of Moate, (formerly of the Royal Artillery,) whose steadiness and experience proved highly valuable to me, and who, on inspecting the Tumor, at once agreed with me as to the absolute necessity and perfect practicability, as well as safety, of the operation. The appearance and situation of the Tumor were now as follow :

It occupied nearly the whole of the right side of the face and neck, extending from the zygomatic arch, under which it seemed imbedded, to within two inches of the clavicle, in which direction it measured in its anterior circuit eleven inches and a half.

The ear was pushed up towards the temple, so that its lobe was expanded over the Tumor, and the

sides of the meatus externus so closely pressed together, that hearing was entirely obstructed on that side.

Posteriorly it extended to the distance of five inches and a half from the lobe of the ear, and anteriorly over the upper and lower maxillæ, and to within an inch of the angle of the mouth; in this direction it measured from behind, round the most projecting point of its surface, to the sulcus in the skin, parallel to the trachea, twelve inches and a half. The skin covering it was in some spots rather of a livid hue, where some superficial ulcerations had been produced by the irritating applications formerly used, but though very tense, it did not adhere to it. The surface was studded with irregular knobs; several veins extended in various directions over the Tumor, but the external jugular was found below and behind it of its natural size. The Tumor did not appear to adhere to the maxillæ, as it could be moved a little to either side, and slightly rotated, though it could not be pulled forwards. The carotid was felt beating deeply under it near the clavicle, but near the angle of the jaw it could not be ascertained whether the vessel ran through it or under it. The jaws, anteriorly, could only be separated about an inch. On looking into the mouth the Tumor appeared encroaching on both gums, it covered three of the inferior molares, and one of the superior molares had been extracted in order to prevent the

Tumor from being pinched by it during mastication. The Tumor also protruded inwards behind the velum palati, which it pressed forwards and laterally, insomuch that the uvula was completely thrown to the left side, thereby effacing altogether one of the arches of the soft palate. The velum had become more vascular, and upon the slightest changes of weather, was attacked with inflammation, bringing with it difficult deglutition, and the other painful accompaniments of cynanche tonsillaris. From the sound of the voice it was evident that this portion of the Tumor pressed on one or both the posterior nares, and the man was latterly obliged to be awakened two or three times at night, as the swelling pressed on the epiglottis, and threatened suffocation. This symptom, together with the tendency to cynanche, and the perfect mobility of the Tumor, pointed out at once the propriety and necessity of extirpation, particularly as the patient's state of health was so favourable to it.

The operation was commenced by making two semilunar incisions on a line with the lower jaw, the upper one about an inch below it, and both extended so as to include a portion of integuments fourteen inches in length, by five in breadth, which was left adhering. Upon cutting through the integuments, the platysma myoides, instead of being spread in a sheet over the Tumor, was collected at different

points into bundles of pale fibres. As I removed these by the knife, and approached the base of the Tumor, the latter receded from the face, and assumed a more globular form, with a narrow neck protruding inwards amongst the deep-seated muscles, vessels, &c., in that triangular space formed by the upper and anterior edge of the sterno-mastoid muscle, the base of the under jaw, and the digastric muscle.

Hitherto no arterial branch of any size had been met with, but near the neck of the Tumor three large branches were divided, and immediately secured by ligatures; one of them, the posterior auris, which could be felt pulsating under the skin before the operation, another very near it, apparently arising from the facial, and a branch of the lingual, which entered into the base of the Tumor, and chiefly supplied its growth. The facial artery remained untouched; we could feel it pushed over near the chin. As the Tumor could not be twisted out, I was obliged to proceed cautiously, raising the layers of fascia with a dissecting forceps, and separating them with the edge and handle of the knife until the parotid gland appeared, the lower lobe of which lay upon the Tumor, and was bound down to it by a strong fascia, a part of which I at first cut through, and subsequently so much as to enable me to turn up the lower portion of the parotid. We had now

nearly the whole body of the Tumor disengaged, with the exception of its neck, which was attached by strong ligamentous bands to the angle and ramus of the jaw on one side, to the mastoid process on the other, above to the parotid gland and its fascia, and to the cartilage of the ear ; below it was more loosely connected, as its adhesions there were torn through with the handle of the knife. Neither the internal or external carotid, nor jugular vein, was in any way endangered or exposed.

Fortunately a quantity of fatty substance and lymphatic glands, which we cautiously avoided, lay between them and the Tumor, and on dividing the above-mentioned ligamentous bands, the root of the Tumor suddenly gave way, our patient exclaiming that his throat was pulled out.

During our previous examinations, as the Tumor which we felt and observed in the fauces, did not move when the external one was stirred in all directions, we did not conceive it to be a part of the external Tumor, but to be the tonsil and adjoining parts pushed in before it ; however we were deceived in this opinion, as we now found it to be caused by a prolongation of the large Tumor. This lesser or internal Tumor was of a pyriform shape, the base being in the throat.

The body of the large Tumor being in our

way, and not wishing to make any incisions in such a deep situation, we were deliberating for an instant about cutting it off, and then with more ease separating the smaller one, but a slight pull having torn part of the sac, which contained the small Tumor, (which was much thinner than that which contained the larger one,) a quantity of fatty gelatinous matter gushed out, the Tumor contracted, and slipped out of a bed of loose cellular membrane without farther trouble. It was completely removed, not a particle being left behind. The whole Tumor weighed two pounds fourteen ounces, exclusive of the portion of its contents which escaped, and which might make one or two ounces more. The blood lost during the operation was chiefly venous, and did not exceed twelve ounces. On looking into the cavity left by the Tumor when the parts collapsed, its depth appeared formidable indeed, as the clenched hand might easily be buried behind the jaw, and nothing but the pharyngeal muscles and mucous membrane prevented the fingers from passing down the œsophagus. The epiglottis was easily and distinctly felt, but the tonsil of that side was not to be found; we supposed it to have been either pushed deeply backwards and upwards towards the base of the skull, or, what is more likely, absorbed.

The base of the large Tumor lay with its upper edge covering the parotid gland, which was pressed backward, and in great part absorbed; the smaller

Tumor ran under it, likewise pressing it upwards. The external carotid was pressed inwards, and to one side. The styloid process and its muscles lay below the neck of the Tumor, but none of them were laid bare by the knife. The masseter, buccinator, and upper portion of the sterno-mastoid muscle, were felt covered by fatty substance and condensed cellular membrane.

Having carefully sponged the wound, we tied every minute bleeding point we could perceive, to the number of three, and washed the whole surface of the flaps with a saturated solution of alum. Having saved a sufficient quantity of integuments, the flaps were easily brought into proper position by adhesive plaster. Compresses dipt in cold water were applied externally, and the whole supported by a double headed roller round the head and neck.

We did not adopt the usual custom of stuffing the wound with dry lint, as we wished to unite as much of it as possible by the first intention, and thereby diminish the subsequent inflammation and suppuration.

One of our two unprofessional assistants having, without our knowledge, plied the man rather too freely with pure wine to support his strength during the operation, and the bandage being rather too tight, when he had been about an hour in bed, an

oozing of blood took place from both angles of the wound ; however, on removing the bandage, exposing the parts to the cool air, and applying pressure with the fingers over the compresses, frequently moistened with cold water, the bleeding very soon ceased.

A loose bandage was now applied round the neck, and no hæmorrhage afterwards occurred, except a small quantity, barely sufficient to discolour the compresses.

He spent the first and second nights after the operation well, slept soundly, and was only disturbed occasionally by some viscid saliva and mucus collected in the mouth, and which, from the loss of contractile power on one side, could perhaps neither be expelled nor swallowed. On each of those days a dose of *sulphas magnesiae*, acidulated with sulphuric acid, was administered, which operated sufficiently.

3rd Day, (21st April.) The face and neck appeared puffed considerably ; the internal fauces much swelled ; deglutition very painful ; pulse 82. The wound was exposed for the first time, and the neck inclined more to the affected side, when a sanious discharge issued freely from it, and completely relieved the tension and soreness of the throat ; a few stripes of adhesive plaster put on moderately

tight, a pledget of unguentum album, and a loose bandage were then applied.

4th. Puffiness abating; sanious discharge continues; deglutition quite free; complains greatly of hunger, as he has been only allowed whey since the operation; bowels free; pulse 70. Ordered bread and soup.

5th. Wound dressed, greatly contracted, and adherent every where except at both angles and below the ear, where it had been kept open to favour the exit of any discharge. Granulation and suppuration commencing. Allowed full diet.

6th, 7th, and 8th. Wound dressed each day, contracting gradually. Swelling of the lower flap nearly gone. Cheek, particularly about the parotid, still much swelled. Suppuration continuing, took yesterday (7th) $\mathfrak{z}\text{i}$ pulv. jalapæ comp. Eats heartily; and was able to walk about freely after the sixth day.

Three of the ligatures were detached before the tenth day; the remaining three were cut short and left behind; some parts seemed to be included in their knots, as they still remained firm, and produced great pain at every slight attempt to loosen them.

From this time the wound gradually improved, but was not entirely healed until the termination of the fifth week, as a portion of the skin at one angle of it became inverted, and was with difficulty restored to its proper position.

The man has been now (July 10th) for some weeks engaged in his usual occupations, the wound having healed completely over the three silk ligatures; the knots and a portion of the threads of which remain within, and produce no inconvenience. The wound measures now scarce a third of its original extent.

Immediately after the operation the ear of the affected side recovered its position, and the hearing was restored, but he complained of being unable to close the right eyelids; the mouth was slightly turned to the opposite side, but as the fullness of the cheek of the affected side disappeared, these symptoms considerably improved. However, as several branches of the seventh pair of nerves must have been unavoidably divided during the operation, it is probable that he may always labour under a partial paralysis of the right cheek.

ON THE
INDICATIONS AFFORDED
BY THE
SENSIBLE QUALITIES OF PLANTS,
WITH RESPECT TO THEIR
MEDICAL PROPERTIES.

By JONATHAN OSBORNE, M. B.,
&c. &c. &c.

Read, Jan. 8, 1827.

A METHOD of ascertaining the medical properties of plants has been an object of research from the earliest ages, and yet up to the present time we have been indebted, either to the experience of savage nations, or to accidental discoveries, for our acquaintance with almost all the vegetable substances which are used either in agriculture or medicine.

It must be confessed that the existence of valuable properties in plants can be accurately determined by positive experience alone, but the ques-

tion then comes to be considered how is such experience to be obtained, and who are to be the experimenters? A sufficient number of persons will never be found possessed of either courage or patience enough to make any extensive trials on their own persons of the effects of vegetable substances, which have hitherto been untried. The field for such observations is so immense, and the qualities of plants so various both in kind and proportion, that the experimenter is quite at a loss to know where or how to begin. The same dose which hardly informs him of the qualities of one plant, may poison him in another. In this inquiry he wanders without a guide, and has no chain of facts from which new facts may be found to depend, or by the aid of which analogical views can be constructed.

Experiments on animals have in many instances led to useful results, but these only apply to poisonous substances, as we have no cognizance of the effect produced, unless it has been attended by considerable alteration of structure or function; and even with respect to these, the results are so uncertain as hardly to afford an approximation of their effects on the human subject. Thus, pigs feed on hyosciamus with perfect impunity. Hedgehogs have been observed to eat cantharides in abundance. An ounce of opium produces scarcely as much effect on a horse as a grain does on a man. Dogs are often

unaffected by large doses of opium, and in Orfila's Experiments it was necessary to use three, and sometimes four times the quantity of opium which would be sufficient in the human subject, although so much exceeding in size. Hence it follows that experiments on the lower animals will not prove a substance to be free from qualities deleterious to man; and on the other hand they may fail even in proving the presence of such qualities. Thus it is said that pigs have been killed by the use of pepper; and we have frequent opportunities of witnessing how the infusion of quassia causes immediate convulsions and death in the common house-fly. But the objection to such experiments which is of the most extensive application arises from our want of means to ascertain the sensations produced. Hence, the greatest mistakes may occur as to the *modus operandi*. To take an instance: it is well known that dogs go occasionally into the fields and swallow some vegetable substance which produces vomiting; hence it has been concluded that they chose a plant possessed of emetic qualities. Further examination, however, shows that the substance swallowed is grass, and that the vomiting is produced merely by the titillation of the passage leading to the stomach.

The inadequacy of vegetable chemistry in its present state, as a test of medical qualities, might be illustrated by some examples; but even if these could not be found, and let it be supposed that the

analysis of vegetable substances had been improved to such a degree as to be incapable of further improvement, still the same objection would apply to it as a method of investigation, which applies to actual experiment on the human subject, namely, that to pursue it to an extent at all commensurate with the vast number of the species of the vegetable kingdom would be the labour of ages, and that the progress of such investigation, when unaided by other considerations, would present only isolated facts confined to individual plants; and that thus no new paths would be opened to indicate where future experiments might be attended with the most profitable results.

The doctrine of signatures brought forward by the mystics and astrologers of Germany, although illusory, and merely an offspring of the imagination, yet excited a spirit of inquiry, and had ultimately the effect of introducing into notice several articles which still hold a high rank in the *Materia Medica*. Indeed, without system, motives for investigation cannot be found, and the nearer the system approaches to perfection, the stronger becomes the desire to fill up the remaining deficiencies. The advantages of connecting together the properties of vegetable substances into a system, were too obvious to have been entirely overlooked; and as those properties are as numerous as the substances to which they belong, and are derived from the

internal organization of each plant, with which also the exterior organs stand in intimate connexion, it was easy to conceive that the botanical characters might designate the medical properties. Accordingly those botanists who have laboured to perfect the natural system have set forth its correspondence with medical qualities as one of its peculiar excellencies. It is not to be denied that the best marked natural families of plants are possessed of similar properties. Thus the solanaceæ are narcotic, the verticillatæ aromatic, and the coniferæ resinous and stimulant, &c. &c. But with what numerous exceptions must those statements be received. In the solanaceæ we find the berry of belladonna, a narcotic poison, and in the same family the berries of capsicum, and of physalis alkekengi, the former used as a spice, and the latter eaten as a fruit. Again, the woody root of the genista canariensis furnishes the oil of rhodium; while another root of the same natural family, glycyrrhizæ, is liquorice-root. To confine ourselves to the well-known genus, ranunculus, we find dispositions of the acrid principle which could not be comprised in any botanical system; thus the root of the ranunculus sceleratus is mild, although the plant is one of the most acrid of the genus, and the root of the ranunculus ficaria is acrid, while the leaves are so mild that they may be used in spring as a salad. Nor can this be otherwise, when even in the same plants the most opposite properties exist in the different parts.

The *garcinia mangostana*, the fruit of which is celebrated as the most delicious production of the East Indies, has acrid wood and leaves; and the fruit of the gamboge tree, which is extremely acrid, and belongs to the same genus, is acidulous and saccharine, and is eaten in the east. The juice which flows from wounds made in the fig-tree (*ficus carica*) is acrid, and is employed to destroy warts. The nut of the *anacardium occidentale* is innocent, containing only a mild oil, while the husk contains an acrid juice, which is used in some parts of America as a caustic. To avail ourselves of a familiar example, we have in the lemon an aromatic rind, acrid juice, and bitter pulp and seeds. The qualities of many vegetable substances are entirely changed by external circumstances. Coffee before it has been roasted is quite destitute of the properties which constitute its excellence. Cultivation diminishes the peculiar properties of all plants, and assimilates them to one standard by increasing their saccharine and amylaceous constituents. Even in plants growing wild the most marked differences have been observed connected with difference of climate and situation. The leaves of the *rhododendron chrysanthum* were found to be narcotic, cathartic, or inefficient, according to the different regions of Siberia in which they were collected. The deleterious qualities of the *umbellatæ* are greatly increased when growing in watry situations; and plants which grow in dry and alpine districts are generally bitter and tonic. The

important alterations depending on season are sufficiently illustrated by the bulb of colchicum ; but it would be useless to multiply instances, as those appear sufficient to demonstrate the inadequacy of botanical system as an indicator of the medical properties of vegetable substances.

The instinct of animals, by which they are enabled to choose their appropriate food, exerted as it must be through the medium of their organs of sense, necessarily leads us to the conclusion that there is a connexion between sensible qualities and medical or dietetic properties. This connexion had been taken into consideration by Abercrombie, Sir J. Floyer, and Dr. Ruty of this city, but the statements upon which their observations are founded are erroneous, and consequently so inconsistent with each other, as to be altogether unworthy of attention. Linnæus, in the *Amænit. Academicæ*, entered on a part of the investigation with his usual perspicuity, and in a manner which shows that he was deeply impressed with a sense of its importance. It is however to be regretted that he suffered himself to be led astray from the strict observation of sensible qualities by botanical analogies, and also that he took colour and other unimportant circumstances into account.

The method of ascertaining the properties of plants, which shall be the object of the following

pages to illustrate, rests simply on the observation, that vegetable productions which act on one function of the body, have also a corresponding effect on some other function in the same animal. Substances which are rubefacient externally, are stimulant when taken internally. Emetics when they pass the stomach are purgative. Substances which, when applied to the eye, cause dilatation of the pupil, when taken internally prove to be narcotic. If this be true in those instances, it will not appear improbable that their effects on the interior functions of the body may be accompanied by corresponding effects on the more delicate organs of sense, especially on those of taste and smell. But as tastes and odours are incapable of definition, and as the words by which they are usually designated are exceedingly vague in signification, and, moreover, as a great number of them cannot be expressed by any words whatever, the only method of communicating our ideas of them to others is by a reference to the qualities of known objects. When there is no known object to which we can compare them, then nothing but actual trial can impart an adequate conception of them. Now this is the case with some articles of the *Materia Medica*, and it will be found that their medical properties are as little capable of comparison as their sensible qualities. *Digitalis* may be mentioned as an illustration. The leaves have a peculiar disagreeable, bitterish, acrid taste, which, with the odour, are best perceived in the tincture, and can-

not be compared with those of any other substance with which I am acquainted. As might be expected from the acrid taste, when given in a concentrated form, it produces excoriations of the fauces; while the peculiarity of its taste and odour is corresponded to by equally peculiar, and indeed unique effects on the living animal, especially on the circulation, in which it is distinguished from all the other articles of the *Materia Medica*.

Ipecacuan is another substance which, although ascertained to be the produce of several plants, is yet esteemed in commerce in proportion to the conformity of its sensible qualities with an established standard. Its musty odour and acrid taste are the tests by which its activity are judged. The roots of some European species of violet (which have been found to contain emetine) resemble ipecacuan in medical effect in the same proportion in which they resemble it in taste and odour. But besides these we are not acquainted with any vegetable production possessed of similar properties, either sensible or medical.

Such substances must be placed by themselves until others resembling them are found, and if at any time it shall be discovered that there are two vegetable productions which exactly agree in sensible, but differ in medical qualities, then the necessary connexion between those two sets of qualities will be disproved, and the method, which is the

subject of the following pages, and which rests on it as a foundation, will be subverted.

We now proceed to take a brief review of some groups of vegetable substances placed according to their agreement in sensible qualities, in order to see how far this agreement is corresponded to by an agreement in medical qualities. With a view to facilitate this comparison, the specimens of each group are generally selected from the best known articles of the *Materia Medica*. The groups themselves are a selection from a far greater number in which I have been engaged, and will be found, I hope, sufficiently distinct and diversified, to exemplify the proposed method of pursuing the investigation.

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|-------------------------------|---|
| 1. Group. Sweet. | 12. Group. Corrosive acrid bitter. |
| 2. ——— Acidulous sweet. | 13. ——— Styptic. |
| 3. ——— Opiate. | 14. ——— Aromatic. |
| 4. ——— Nauseous. | 15. ——— Aromatic bitter. |
| 5. ——— Nauseous opiate. | 16. ——— Taste and odour of
mustard. |
| 6. ——— Acrid. | 17. ——— Alliaceous. |
| 7. ——— Nauseous acrid. | 18. ——— Odour of valerian. |
| 8. ——— Opiate nauseous acrid. | 19. ——— Terebinthinate. |
| 9. ——— Bitter. | 20. ——— Taste and odour of
peach leaves. |
| 10. ——— Intensely bitter. | |
| 11. ——— Acrid bitter. | |

I. SWEET.—*Juice of the Sugar-cane and of all the Grasses.* The grasses, when young, have a sweetish herbaceous taste, and possess no remarkable property

except that of being laxative in proportion to their sweetness. There is one British grass, (*lolium temulentum*,) the seeds of which are sometimes accidentally mixed with corn. Bread, and especially malt drinks in which they have been infused, are observed to produce temporary delirium. But in these seeds the narcotic qualities are sufficiently indicated by sensible qualities which do not belong to this group.

II. ACIDULOUS SWEET.—*Almost all fruits.* Fruits are generally excellent, and unlikely to produce mischievous effects, in proportion as they are delicious to the taste. We know no instance of a poisonous fruit which commends itself by its flavour. Fruits of a fatuous or undecided taste, such as melons, cucumbers, or pomegranates, are indigestible, and produce flatulence; and the bad effects of unripe or sour fruits are sufficiently notorious.

III. OPIATE ODOUR.—*Opium. Stramonium. Lettuce when allowed to grow to seed. Belladonna.* In belladonna the odour is very faint, but I have been able to make my trials only on the cultivated plant. In opium it depends on a principle volatilized or destroyed by heat, and is not in the watery extract, in morphia, narcotine, or meconic acid. In the specimens of British opium which I have seen, it is hardly to be perceived, most probably in con-

sequence of the application of artificial heat. Thus it appears, that this odour, which is so characteristic of the group, is not derived from the active principles themselves, but from another substance co-existing with them. The same observation applies to the well-known odour of peach kernels, and other substances containing Prussic acid, which is not the odour of that poisonous substance itself, but belongs to a volatile oil always coexisting with it.

IV. NAUSEOUS TASTE.

1. Nauseous sweet.—*Manna. Pulp of Cassia.*
2. Nauseous bitterish.—*Senna. Linum catharticum. Rhubarb.*
3. Nauseous bitter.—*Berry of Rhamnus catharticus. Aloes. Gratiola officinalis. Menyanthes trifoliata. Colocynth. Elaterium.*

All the individuals of this group are purgative. The word nauseous is used to express their characteristic taste, but by no means conveys an adequate conception of it, which can only be obtained by tasting articles in which it is combined with other tastes, as in the three sections above-mentioned. When this nauseous principle is got rid of, as it may be, for instance, in senna and rhubarb, by the continued application of heat, then the purgative qua-

lity is destroyed. Hence arises the difficulty of rendering vegetable cathartics pleasant to the palate. The nauseous taste is also generally accompanied by an odour of the same kind, and when the nostrils are closed the disgusting impression is greatly diminished.

Rhubarb, besides being nauseous and bitterish, has also a styptic or astringent taste. In the third section we have instances of considerable bitterness combined; those substances are tonic as well as purgative, but in some the latter quality is so highly concentrated, that the former is lost sight of. Thus colocynth moves the bowels in the smallest doses, and purging has been produced by its odour alone. On the contrary, in others, as aloes, the constitutional effect is often more perceptible than the effect on the bowels. This, however, is an occurrence generally to be prevented by increasing the dose, so as to bring a sufficient quantity of nauseous principle into action, which may be done with the more freedom, as bitters are found to heighten, rather than diminish, the operation of purgative medicines.

V. NAUSEOUS OPIATE.—*Hyosciamus niger*. This plant is laxative and narcotic, exactly corresponding to the compounded taste. The sensible qualities are far more powerful in the fresh plant than in any preparation. The tincture retains considerably more of them than the extract as usually made, and when

taken in dilution, as, for example, in mucilages, it commonly purges. But it is necessary to remark, that hyosciamus is generally given in too small doses to produce either of the effects above mentioned. Hence the equivocal praise bestowed on it, that it does not produce constipation of the bowels.

VI. ACRID TASTE.—*Euphorbium*. *Mezereon*. *Aconite*. Several species of *Ranunculus*, *Anemone*, and *Clematis*. *Arum Maculatum*. *Gamboge*. The seeds of the *Ricinus Communis*, and *Croton Tiglium*. These possess no characteristic odour, but are sufficiently distinguished by exciting in the mouth, and especially in the pharynx, a burning sensation, which is not generally perceived till some time after tasting, but which often proves very painful, and lasts a considerable time. The officinal euphorbia is so acrid, that its internal use has been discontinued. The oil expressed from the seeds of euphorbia lathyris has been lately introduced as a purgative in Italy, where it is indigenous; the large size of the seed in this species of euphorbia renders it probable that the quantity of fixed oil may be sufficient to dilute the acrid principle, and thus render it a safe purgative. In gamboge the acrid principle is combined with a large quantity of inert matter. When given in moderate doses it stimulates the mucous surface to increased secretion, but when given in large doses it produces inflammation of that surface, as indicated by vomiting, violent tormina,

and tenesmus. All the acrid vegetable substances coincide in this mode of action. They are also generally found to excite the kidneys after the purging is over, or when they have been given in such minute doses as not to produce any sensible effect on the bowels. This effect, which appears to arise from their being absorbed, has caused them to be generally preferred as purgatives in dropsical cases.

In castor oil we have the acrid principle enveloped in such a large proportion of oil, that while the bowels are gently stimulated, their contents are at the same time lubricated and softened so as to facilitate their expulsion. Nevertheless this general mild effect of castor oil ought not to cause the acrimoniousness of its active principle to be lost sight of. When tasted it leaves a sense of acrimony in the throat; and in dysentery and other cases in which the mucous surface is inflamed, mischievous effects are frequently observed to follow the employment of it. This acrimonious purging principle is diminished by age, and also by heat; and we find in the inferior sorts, which are extracted with the assistance of heat, that the purging quality is less, while the rancidity produced by the operation causes them to disagree with the stomach.

Croton oil, which is expressed from the seeds of the croton tiglium, contains so large a proportion of acrid principle, that it has been generally adminis-

tered in pills of liquorice-root, or crumb of bread, in order to avoid the burning sensation which it occasions in the mouth and throat. It is unnecessary to mention the close correspondence between those sensible qualities and the powerful effects which it produces on the bowels.

VII. NAUSEOUS ACRID TASTE.—*Scammony. Jalap. Helleborus niger. Veratrum album. Helleborus fætidus.* These are all powerful purgatives. In jalap there is reason to believe that much, both of its nauseous and acrid principle, is lost in the process of drying and pulverising, to which the inferiority of old jalap, when kept in powder, is attributable. Scammony has an odour resembling that of cheese, and the best roots of scammony are those in which this odour is strongest. In helleborus niger the fibres of the root exceed the tuber in the acrid taste and peculiar nauseous odour, and their effect on the intestinal canal is great in the same proportion. In veratrum album most of the nauseous odour is lost in drying, and its virulent effects are best indicated by its acidity, which causes a burning sensation in the throat.

VIII. OPIATE NAUSEOUS ACRID.—*Tobacco. Lobelia Syphilitica.* The opiate odour is very powerful in the living plant of tobacco, but after drying it becomes confused, owing to other odours which are then developed. However this, with its nauseous

and acrid taste, announces its peculiar effect on the stomach and bowels. In all these qualities, both sensible and medical, it is closely allied to the *lobelia syphilitica*, a plant which has not been much attended to in Europe.

IX. BITTER.—*Cinchona Bark. Quassia. Gentian.* Bitters are commonly known, even by the public at large, to possess tonic powers. A great number of indigenous plants of this country might be used as bitters. Thus, most of the lichens are bitter and mucilaginous. The general effect of bitters is in small doses to stimulate the stomach, and produce increase of appetite, and in large doses they stimulate to such a degree as to prove emetic, and in some cases purgative. The sensible qualities of cinchona, although manifestly belonging to this group, are yet quite peculiar and characteristic, the taste especially, in which all the sorts resemble each other, cannot be expressed in words, but a knowledge of it may readily be acquired by comparison of it with the tastes of oak bark, gentian, quassia, and Angustura bark. In the bark of St. Lucia (*cinchona floribunda*) a nauseous taste is conjoined, and this sort is even in moderate doses emetic and purgative. Seeing that those vegetable substances, whether simple or compounded, which have proved to be the best substitutes for cinchona, are those which most strongly resemble it in sensible qualities, it cannot be thought too great a refinement to conclude that

those sensible qualities are connected with its peculiar effect in subduing intermittent or periodic affections, by which it is chiefly distinguished from other bitters and tonics. Let it, however, be still kept in mind that this, as well as all other conclusions of the same kind, will be at once disproved if ever vegetable substances shall be found exactly resembling each other in sensible, but differing in medical properties.

X. INTENSE BITTERNESS.—*Seeds of Strychnos Nux Vomica, and of Ignatia Amara, or Bean of St. Ignatius. Snake-wood, (supposed from Strychnos Colubrinum.) False Angustura Bark. Berries of Cocculus Suberosus, (commonly called Cocculus Indicus,) Hops.* Nux vomica and the bean of St. Ignatius have of late assumed an extraordinary degree of interest from the poison which has been extracted from them, and which, in proportion to its quantity, is one of the most powerful destroyers of animal life. On this account, and in consequence of its botanical relations, nux vomica has been generally placed among the narcotic poisons. A very slight experimental examination, however, is sufficient to prove that their mode of action is quite different. They both agree in producing death by asphyxia, but produce it in a way so diametrically opposite, that it is not unreasonable to presume that the fatal effects of either might be averted by a timely employment of

the other. In cases of poisoning by opium and other narcotics, the muscles are in a state of relaxation, and the convulsions which occur occasionally are only secondary, and the result of paralysis of the antagonist muscles. At length, according as the muscles concerned in respiration become paralysed, stertorous breathing comes on, and death ensues when that function can no longer be performed. The fatal effect of *nux vomica*, on the other hand, is preceded by violent tetanic spasms, rigidity of the voluntary muscles, and laborious efforts at respiration; and in some cases sudden death appears to be produced by spasmodic contraction of the heart. It is necessary to keep in view this contrast between the mode of action of narcotics and that of *nux vomica* and the other intense bitters, otherwise it might be supposed that the marked difference between their sensible qualities was not corresponded to by a difference in medical properties. The distinction between the intense bitters and the simple bitters is by no means so obvious, and as far as our organs of taste can appreciate, consists only in degree. When, however, we confirm our taste by other circumstances, the degree of bitterness is proved to be so great as to form a sufficient distinction. Fifteen parts of *strychnia* may be dissolved in ten million parts of water without the bitterness being lost. From the intensity of bitterness thus evinced, we are directly led to consider the question, whether the medical properties of *nux vomica* and of the

other intense bitters bear a resemblance to those of the simple bitters above mentioned. May the tetanus occasioned by *nux vomica* be considered as a greater degree of effect, but one of the same kind, as might be produced by gentian or quassia? We observe effects common to both. According to Dr. Roxburgh the natives in the East Indies use the intensely bitter root of the *nux vomica* tree as a remedy in agues, and they also use the seeds in the manufacture of country spirits, to render them more intoxicating. In Germany *nux vomica* has been preferred even to cinchona in the cure of intermittents, and held the chief place in the electuarius *ab ovo*, which was used as a cardiac and alexipharmic. When given lately in paralysis of the limbs it has been found to increase the retentive powers of the bladder. The long continued use of large doses of sulphate of quinine in a convalescent from a severe pulmonary affection, produced a heaviness and stupor resembling the soporific effects occasionally obtained from the use of hops. The active principle of the *cocculus suberosus* (picrotoxine) is described by M. Boullay, the discoverer, as possessed of an intense degree of bitterness, “une amertume epouvantable.” Ten grains of it given in crumb of bread to a dog produced violent convulsions and death within the space of forty-five minutes. In various parts of the East Indies the berries are placed in ponds for the purpose of catching the fish, and also the birds which

happen to drink of the water, which are thereby rendered incapable of making their escape.

False Angustura bark is so bitter, that many persons cannot taste it without experiencing nausea. Its poisonous effects resemble those of *nux vomica*.

As the simple bitters cannot be given in great quantity without provoking their rejection, it has not been ascertained how far they may produce spasmodic action, yet that they have such a property is rendered probable when we refer to the infusion of quassia, before mentioned, which is used as a poison for flies, and which in a very short time causes them to fall into convulsions.

XI. ACRID BITTER.—*Scilla Maritima*. *Colchicum Autumnale*. *Guaiaicum*. *Arnica Montana*. All those are stimulant, and when administered in such doses as not to produce a sensible effect on the stomach or bowels, they are absorbed, and act on the kidneys or surface of the body, accordingly as they are assisted by dilution, external warmth, or other means. Squill, when fresh and in good order, is somewhat nauseous, and in proportion to its acridity, has more effect on the bowels than the others. The seeds of *colchicum*, according to the test of taste, are decidedly the most certain and uniform part of the plant. The preference usually given to squill in pectoral cases appears to have arisen from its ten-

dency to produce vomiting. While colchicum and guaiacum are most frequently given in rheumatic and gouty cases, arnica has been preferred in paralysis. Those various uses have been fixed on more from caprice or accident, than from any series of experimental proofs, and those substances have so much in common in their mode of action, especially squill with colchicum, and guaiacum with arnica, as to require only the same subsidiary means in order to produce the same effects.

XII. CORROSIVE ACRID BITTER.—*Rhus Toxicodendron*. The juice of this plant is so acrid as to produce ulceration when applied to the skin. It has been used with some success in paralysis, and even when not successful it produced a sensation of pricking or twitching in the affected limb, in this respect resembling the effect of *nux vomica* in the same disease.

XIII. STYPTIC OR ASTRINGENT.—*Logwood*. *Kino*. *Catechu*. *Root of Tormentil*. In some of these, as logwood, a sweet taste is combined with the astringency. In others, as tormentil, there is bitterness. In all, however, in which astringency predominates, the peculiar effect is generally observed from their use, that while excessive discharges of the mucous surface are restrained, the healthy secretion is not interfered with; hence the advantage derived from them in most cases of diarrhœa.

XIV. AROMATIC.—Aromatics are extensively diffused throughout the vegetable kingdom. Among the labiatae and umbellatae especially they are found in great number and variety. Various as they are with respect to the agreeable or contrary impression produced on the olfactory organ; they all agree in volatility, pungency of taste, resembling that of camphor, and in producing redness when applied to the skin. When given in large doses they resemble camphor in producing an excitement, followed by tranquillity, and like it they tend powerfully towards the skin. Their action in expelling flatus depends on their volatility, by which they are presented in a gaseous form to those portions of the intestinal tube occupied by aeriform matter, which are thus stimulated to expel their contents, an effect which could not be obtained by any merely liquid substance; in this respect they resemble the volatile alkali.

XV. AROMATIC BITTER.—*Chamomile. Sage. Angustura Bark. Cascarilla.* The aroma of those substances is destroyed by long continued application of heat, while the bitterness remains unimpaired, and they are thus reduced to simple bitters. The importance of this remark may be illustrated by comparing a cold infusion of chamomile with the decoction of that substance.

XVI. TASTE AND ODOUR OF MUSTARD.—*Horse-radish, and a great number of the Cruciferae.*

Tropæolum Majus, &c. The peculiar taste and smell of the juice or seeds of the cruciform plants sufficiently distinguish this group from aromatics. This odour affects the schneiderian membrane in a peculiar manner, as is often experienced in using mustard or horse-radish. It is characteristic of this sensation to be immediately relieved by the odour of bread. When aromatics are suddenly taken, they affect respiration for the moment, and when strongly snuffed up the nostrils they produce a disagreeable sensation, which is, however, quite different from that produced by the odour of the cruciferæ.

The properties of the cruciferæ depend on a volatile principle, of which there is a preparation in the Pharmacopæias, the spiritus armoraciæ comp. In some vegetables, as cabbage, broccoli, or turnips, it is got rid of by cultivation and boiling; while in others, as mustard and horse-radish, it is preserved and used as a condiment. These qualities are also found in the *tropæolum majus*, or garden nasturtium, which is frequently used on the Continent as a salad. All the plants possessed of these qualities are esculent, and many of them have been found most powerful means for the prevention and cure of sea scurvy.

XVII. ALLIACEOUS ODOUR.—*Strongest in Assa-fœtida. Garlic. Onions. Leeks, &c. Erysimum*

Alliaria. Petiveria Alliacea. Peltaria Alliacea. The individuals of this group, which possess the characteristic odour in the highest degree, have been found to produce decided benefit in hysterical and other spasmodic affections, especially those of the respiratory organs. Garlic, and some others of them which are acrimonious, producing vesication when applied to the skin, have a diuretic effect when taken so as to be absorbed. With respect to assafœtida, it ought to be given in doses far exceeding those usually employed, which produce all the disagreeable effects belonging to its sensible qualities, without exciting the system to a new mode of action. Its strength also is very unequal, being almost entirely dependent on its freshness. According to Kaempfer one drachm of assafœtida in Persia diffuses a stronger odour than one hundred pounds when sold in Europe. When exported fresh from Persia the bags containing it are hung on the tops of the masts, as it would be insupportable to the passengers, and spoil the cargo if retained in any part of the vessel.

XVIII. ODOUR OF VALERIAN.—In this group we may place conium, which, when fresh, especially the seeds, has an odour resembling that of valerian. The tastes of both are different, valerian being bitterish, and conium acrid. That both possess an influence in spasmodic affections, when

given in sufficient doses, is now an established fact, but the difference of taste points out an essential difference in other respects. Although the virtues of conium, as a discutient of indolent tumours, were prodigiously exaggerated by Stoerk and his followers, yet it is undeniable that the external application of it is frequently attended with the desired effect. When taken in sufficient doses, which it very rarely is, it proves diuretic; and in smaller doses resembles valerian in relieving palpitation of the heart and other nervous symptoms. The vertigo which attends large or long continued doses of conium has not been observed as a consequence of valerian, probably in consequence of the bitterness of the latter preventing its exhibition in sufficient quantity.

XIX. ODOUR AND TASTE OF TURPENTINE.—

Turpentine. Mastiche. Savine. Cajeput Oil. Balsam of Copaiba. Cubebs Pepper. Buchu Leaves. These are all externally rubefacient, and internally carminative and diuretic. They exert a peculiar influence over the mucous surface of the urinary apparatus, thus agreeing with camphor, the effect of which in obviating the strangury produced by cantharides is now no longer matter of doubt. The similarity of taste between cubebs and copaiba, so unexpected, whether we regard the difference with respect to their botanical relations, or the different

parts of the plants used, the one being the juice extracted from the wood, the other the berry, and yet so exactly corresponded to by similarity in medical virtues, is a coincidence that ought to make an impression on the most indifferent observer.

Buchu leaves have proved an excellent remedy in irritation of the urinary passages, and, being more aromatic, are preferable to the others when the tone of the digestive organs is to be improved.

XX. TASTE AND ODOUR OF PEACH LEAVES.—
In all the vegetable substances possessed of this taste and odour that have as yet been analyzed, the existence of prussic acid has been ascertained, and that in proportion to the strength of the odour. Its medical qualities are too well known to require any illustration on the present occasion.

From this brief view I think the conclusion is obvious, that the true signatures of the qualities of plants are to be found in their sensible qualities, and especially in their tastes and odours. The difficulty of describing those qualities can be met only by placing in groups those which most strongly resemble each other. The attempt to give written descriptions of tastes or odours appears to have prevented the further progress of this kind of investiga-

tion, even after it had been commenced by Linnæus and his pupils.

When we find a number of substances which agree so well both in sensible and medical qualities that a difference in the one is attended by a difference in the other, we may then conclude that the exception proves the rule ; and proceeding from the difference thus established to other substances corresponding thereto, we may combine a chain of facts so as to form the basis of general propositions, not only extending to the thousands of plants which lie neglected around us, but also throwing a new light on the real uses of those with which we are already in some measure acquainted.

In order to distinguish between the tastes of fresh plants it is necessary to practise tasting them so often as not to be embarrassed by the herbaceous taste which is common to all; and which appears to belong to the green colouring matter. Considerable experience also is required to judge of compound tastes and odours. It is to be particularly remembered that this general doctrine of correspondence between sensible qualities and medical properties appears to apply to the vegetable kingdom alone, and not to extend to artificial substances. Even though it be thus confined, yet, as it opens a prospect of penetrating into such a mass of obscurity,

it surely deserves to be cultivated. Under its influence materials may be collected for further experiments, and instead of the scattered fruit which has been left to time and accident to bring down from the tree of knowledge, a regular harvest may be collected, in which all the labours of the cultivators shall be abundantly rewarded.

CASE
OF
TUBERCULAR AFFECTION
OF THE SKIN.

BY JOHN CRAMPTON, M. D.,

&c. &c. &c.

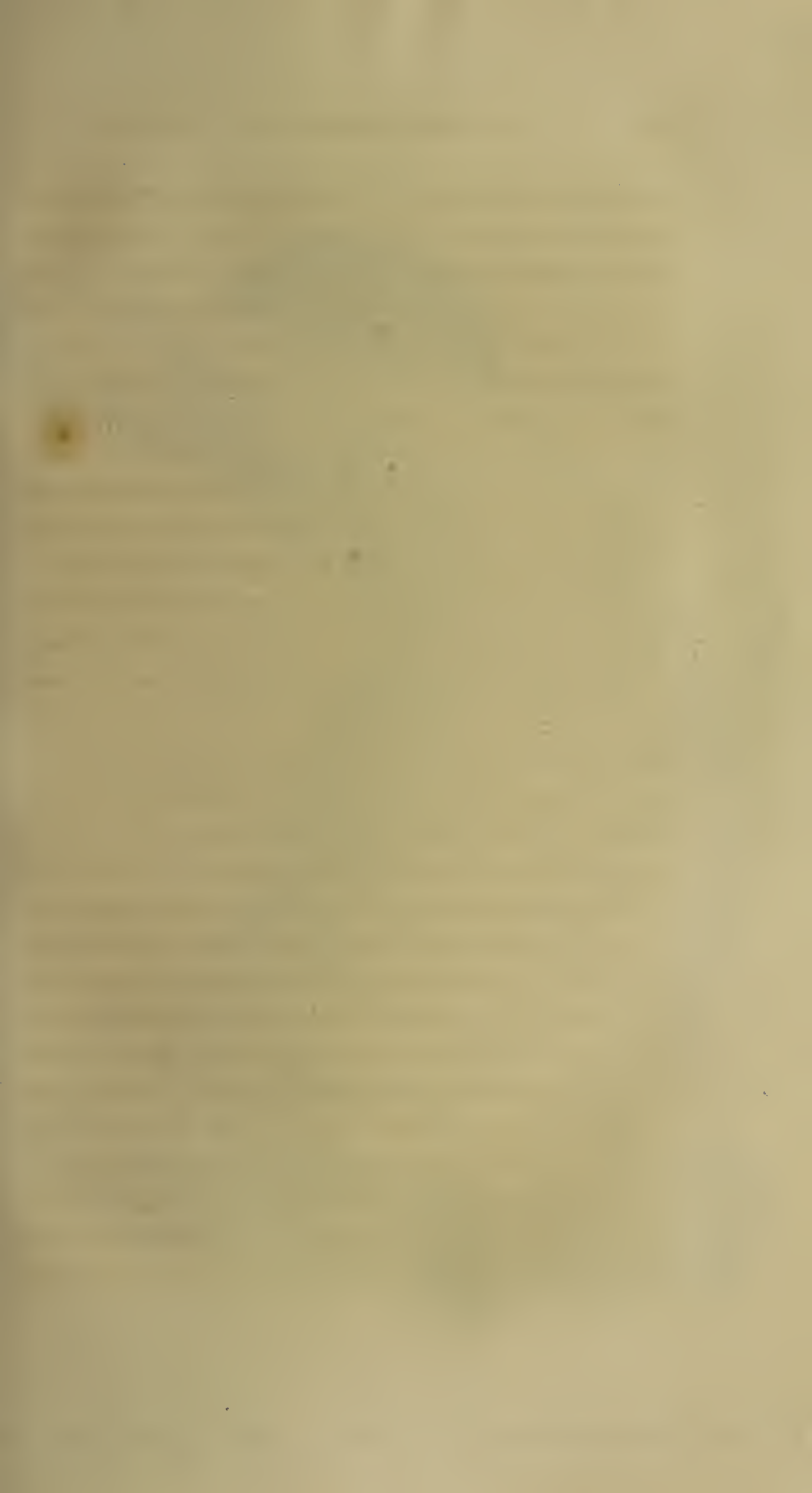
Read, April 2, 1827.

DISEASED appearances which are not very common, may attract our attention at first merely by their novelty; and though at that time they may not be considered as leading to practical utility, yet they frequently, when examined more closely, and looked at in all their relations and sympathies, throw light on inward and obscure diseases.

That disorders of the Skin are more or less connected with the state of the digestive and nutritive functions, none, I believe, will now deny. But I am disposed to think that still further insight may

thus be obtained from external appearances on the surface, as to the condition of some of our most important inward organs in point of soundness and integrity, or the reverse. Without, however, attempting to draw a general conclusion from a single instance, I shall relate the following case, which in some respects bears on this subject.

John Byrne, aged 56, a small emaciated man, a stable-helper, was admitted into hospital complaining of diarrhœa and rheumatic pains. After admission it was soon observed that he laboured under phthisis, which then was supposed to be of the tubercular kind. But what attracted my attention most was the state of his skin, both on the trunk and on the limbs. Large freckles and dark brown olive spots of various shape and size occupied the cuticle in patches; the interstitial spaces were only a shade lighter, being of a dirty dingy colour. In addition a number of tubercles of the same colour were observed on the trunk and arms, some broad, and gelatinous to the touch, about an inch long, and half an inch broad; others harder, like papulæ, about the size of a split pea; others again of a pyramidal form, attached to the surface by narrow, tough, peduncles. Some of these were about half an inch long, and about a quarter of an inch across their depending extremity. Those latter were hard to the touch, and felt cartilaginous, compared with the broad and boggy excrescences which were observed





on some parts of the skin. But in those soft prominences small pisiform and hard nuclei were perceptible both to the sight and touch, as may be seen by inspecting the annexed drawing.

Byrne stated that he enjoyed good health until about twelve months before his admission. The alteration, however, in the state of his Skin was of five years standing. He did not mind it, as he said it did not interfere with his health; he always had a dark freckled skin, but not discoloured to the extent as when he was admitted into the hospital. He appeared to be extremely negligent in his person, and had been very intemperate in drinking spirits.

The treatment adopted was palliative, with a view to the state of his bowels and lungs, as no hopes were entertained of his recovery. Tepid baths were used, but they effected no difference in the appearance of the skin; his pains were however relieved, and his person made more comfortable. I had a drawing made of the posterior left shoulder and part of the arm,* and kept the man in hospital from February to the 18th of August, when he gradually sunk under the usual symptoms of pulmonary consumption.

* A piece of skin has been preserved, which shows the pyramidal tubercles, but much reduced and shrivelled by immersion in spirit.

I was curious to see if, on examination after death, the tubercular diathesis should manifest itself in any of the inward organs or tissues. The following is an account of the appearances as they presented themselves after death.

The body was wasted to the utmost degree of emaciation : the large freckles and irregular brown spots had disappeared after death, or were rather merged into a general dirty brown colour of a lighter shade, but of a uniform appearance. No change had taken place in the tumors or tubercles ; the round and oval papular tubercles were of a caseous texture, penetrated the corion, and lay embedded on the subjacent cellular tissue. On removing the cuticle a gelatinous substance appeared to pervade the cellular texture, especially under the broad and soft prominences ; this gave the surface underneath a marbled appearance. The gelatinous substance afterwards disappeared, having become dissolved in the water, in which portions of the skin were macerated, and did not appear to have any connexion with the external marks on the skin. The pyriform tubercles did not penetrate deep into the corion ; on cutting them out they were found to consist of a tough, white, hard, fibro-cartilaginous substance, no blood-vessels being visible through their texture. Some of the larger cartilaginous excrescences were hollow, and contained a glairy fluid.

The lungs exhibited a diseased mass ; tubercles in every stage. In the upper portion of the lobes the tubercles had degenerated into abscesses in a state of suppuration, and into cavities ; in the middle portions tubercles beginning to soften, whilst in the lower they were small and hard. The heart was remarkably small, but the subject was rather diminutive. The liver hard, and dark-coloured, not enlarged, but giving a gritty feel to the knife ; in fact throughout occupied with the *tubercula diffusa* of Dr. Farre. The spleen likewise in the same diffused tuberculated state. Mesenteric glands and kidneys free from disorder. The mucous membrane of the intestinal canal red, and attenuated, with slight ulcerated excoriations, such as are usually met with in phthisical patients.

To many the recital of such a case will not excite much interest ; there is nothing new in the gradual progress of tuberculated phthisis ; even at the age of 56 the phthisical diathesis decides the fate of the patient. It is only surprising how a man nearly deprived of all the comforts of life, of intemperate habits, excessively negligent of his person, and exposed to every occasional and aggravating cause of pulmonary disorder, could have existed so long.

The large, soft, boggy excrescences on the skin had somewhat the appearance of that form of scro-

fula which sometimes occupies the cellular tissue, but it was not discoloured, as scrofulous tumours usually are, and not surrounded with redness, or accompanied with that degree of tenderness which usually attends the development of scrofula on the surface of the body.

The round and oval papular tumours were like cheese in consistence, and penetrated all the tissues of the skin. Those of a pyramidal form were more cartilaginous, as already described, and not unlike the tubercles found in the livers of sheep, and which are supposed by some to contain hydatids. Were this the case it would accord with Dr. Baron's view of the origin of tubercular accretions.

Had this patient been healthy in other respects, his disorder being limited to the external surface, various methods might have been tried to remove those unsightly excrescences. The hard and prominent ones might have been removed, each in succession, by the knife, or by ligatures on their peduncular attachments; the broad soft ones might have been treated with escharotics, and thus the diseased parts would have been gradually disposed of. Whether those of the cartilaginous description would have sprouted out again after ligature or excision, it is difficult to say, but I am sure they were too hard to be affected by unguents or lotions, or by any method of constitutional treatment. In the hopeless

state in which this poor man was, the treatment was directed merely to make him comfortable as long as he continued to exist.

As to the place such a disorder should occupy in a system of nosology, there may be some doubt. Bateman and Alibert might denominate it *Molluscum*,* and Rayer *Elephantiasis Græcorum*,† as the tubercles on Byrne's skin corresponded with the descriptions given by those authors, and in some degree resembled the plates which are annexed to their works. But none of these writers, although they appear to have bestowed considerable attention on skin diseases, seem to have even hinted at the connexion which might exist between such an external appearance and a general internal tubercular disposition. As soon as I saw this man labouring under phthisis, and affected with an external tubercular affection, my curiosity was immediately excited to decide this point, it being quite obvious he could not long survive the phthisical disorder; and the event has proved the connexion, certainly in but one case. It remains therefore for future experience to determine if these views are founded or not.

If we give this disease a name and a place from its nature and constitutional connexions, we should

* Bateman on Cutaneous Disorders. Alibert, *Maladies de la Peau*.

† Rayer, *Maladies de la Peau*.

endeavour to find it amongst some of the symptomatic species of phthisis. Were we to adopt Dr. Baron of Gloucester's views, we might suppose that both the external and internal tubercles were attributable to similar, or indeed to the same causes. Dr. Baron, as is known to the profession, considers that all tubercular accretions owe their origin and formation to the presence of hydatids.* I shall not attempt to advocate or to controvert his opinions on this subject.

In truth, the causes or peculiar mode of the development of these tubercles on the surface, except in connexion with the inward tubercular disorders, we must conclude are involved in obscurity. The soft and broad tubercular elevations might have been connected with some particular cutaneous irritation, aggravated by total neglect of personal cleanliness or change of linen. Pustular eruptions on the surface are sometimes, but not often, met with when we know some inward organs are broken down in their texture, and in a state of suppuration; but it is an occurrence which has not, I believe, been observed as a concomitant symptom in phthisis.

In some constitutions there is what may be denominated a general tubercular diathesis, for after death we find a considerable number of the inward organs beset with them, as is constantly evinced

* Baron on Tubercular Accretions.

by *post mortem* examination. Tubercles in the lungs are frequently congenital, and may remain dormant for a series of years, until some special irritation makes them advance in size, soften, and suppurate: The liver or spleen may also continue for a long time affected with tubercles in a quiescent state; but sooner or later these organs will give way by undergoing some further change of structure, or the patient will be carried off by dropsy as its sequela.

The Skin disorder in Byrne must, I believe, be viewed as a part of the general tubercular disposition, slowly, but surely advancing, breaking up the texture of organs essential to life, and injuring the appearance and functions of those, at first sight, of less importance, but which in the general harmony of the animal economy cannot be overlooked.

There is a parallel to the one I have described in the case of a gentleman, aged about 27. The skin has the same papular and pyriform hard tumours scattered over the trunk, with, in addition, a few small ones on the face. These, he states to me, have occupied the surface of his body and limbs as long as he can recollect. His complexion is pale and sallow, his figure rather emaciated, his general health indifferent. I should not be surprised if tubercles should at some future period be found in several of his inward organs.

Those who are in the habit of attending to the diseases of animals, will see in quadrupeds, and even in fowls, frequent examples of tuberculated affections, both outwardly and inwardly.

In horses affected with glanders, the membrane lining the nasal cavities, as well as the lungs, is almost always studded with tubercles, as appears from well authenticated examinations after death.* In the disorder called *Button Farcy*, tubercles form the nucleus of the external swelling in the cutaneous tissue of the horse;† and in such instances the lungs are almost always tuberculated, and frequently other viscera.

Horned cattle, sheep, and pigs, are subject also to tuberculated affections of the lungs, as well as of other organs. I have frequently seen tubercles with hydatids in the livers of lambs; and not long since, when carving a hare at my own table, I was surprised to find the whole of the fleshy and muscular parts of the body and limbs studded with white, cheesy, round tubercles, about the size of small peas. The kidneys also, which had not been removed, were in the same morbid state. The animal had been hunted, and was in very bad condition. My curiosity did not induce me to taste it. Whether

* Dupuy de l'Affection Tuberculeuse.

† Idem.

tubercles are congenital, or may happen to be early developed in the human subject, knowing, as we must, how long patients may live with this malformation, it becomes an important question to decide—can they be removed? or how are they to be prevented from quitting that passive and dormant state in which they may remain for such a length of time? I fear we have no evidence of the removal of tubercles from the lungs, although I should be sorry to limit the power of the absorbent system in young subjects, in other respects healthy. To achieve this desirable object, we should strive in every way to promote the healthy action of every other organ in the frame. The same curative principles should be applied to prevent the advancement of passive tubercles, for if they once enlarge or suppurate, except they are very few in number, the patient will soon sink.

There are perhaps no measures which conduce more to prevent this unhappy termination, than a selection of good air, or a suitable climate, frequent change of scene, exercise in a carriage, riding, a long journey, or a sea-voyage. The diet should be nutritive, light, and restorative; the digestive organs, and the bowels especially, should be maintained in an active and healthy state. On the other hand, overstimulating diet and fermented liquors in any thing more than what might be called minute portions, soon excite tubercular deposits, make them inflame,

and undergo the successive changes already described, of which there was so excellent an illustration in the case before us. But I shall forbear from prosecuting this subject any further, as it would lead me into remarks on the treatment of phthisical and hepatic diseases, which, though not altogether unconnected with the case before us, were not contemplated when I sat down to relate the history and appearance of an external tubercular affection.

CASES

INTENDED TO ILLUSTRATE THE APPLICATION AND UTILITY
OF THE

STETHOSCOPE.

BY RICHARD TOWNSEND, A.B. M.D.,

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"New opinions are always suspected, and usually opposed, without any other reason but because they are not already common."—LOCKE on *Human Understanding*.—EPISTLE DEDICATORY.

Read May 5, 1827.

As the importance and utility of mediate auscultation are not as yet so fully recognised in this country, as to procure its general adoption into practice, I hope the following cases may not be deemed altogether devoid of interest, the object of which is to prove that auscultation is capable of affording an extraordinary degree of precision in recognising and distinguishing the most complicated forms of pulmonary disease, and that such information necessarily leads to practically beneficial results.

The first case which I shall adduce is one of pleurisy and pneumothorax, with fistulous communications between the bronchia and sac of the pleura ; a complication of morbid lesions, I believe, never before recognised in this country during the life of the individual.

On the 25th of March, 1827, in compliance with Dr. Cheyne's kind invitation, I visited John Munro at the Royal Infirmary, a tall, well-proportioned dragoon, 30 years of age, of whose previous history I learned the following particulars. His complaints commenced in October last, with cough, pain in chest, and diarrhœa, for which he was bled, blistered, &c. A recurrence of the same symptoms called for a repetition of these measures, which, as well as several others since employed, failed to produce any permanent advantage.

At the time of my visit he was up and dressed, walked about the room, but was soon out of breath, and easily fatigued. He was considerably emaciated, had much dyspnœa, not sufficient however to materially affect his speaking ; profuse night-sweats, diarrhœa, thirst, anorexia ; pulse 120, small, and vibratory ; number of respirations 30. Cough most troublesome on awaking in the morning. Sputa apparently mucous, are stated to have diminished considerably in quantity within the last three weeks, from which period is also dated the aggravation of

his dyspnœa. On viewing the thorax, the right side appeared considerably more dilated than the left, especially anteriorly and laterally, at its lower half. Percussion employed over the dilated surface elicited a clear hollow sound. In this space too the respiratory murmur was perfectly inaudible; but immediately after coughing, a peculiar sound, resembling the vibrations of a porcelain jar, when gently struck, (*tintement métallique*,)* was distinctly heard in a space corresponding to the posterior convexities of the sixth, seventh, and eighth ribs. This sound was not produced either by inspiration or speaking.

Succussion did not produce the sound of fluctuation, although the patient said he felt water dashing against his side. In the superior part of the same side of the chest (the right) the dilatation was scarcely, if at all perceptible. The sound, on percussion, not particularly sonorous, and the respiratory murmur audible posteriorly.

At the left side the sound on percussion was natural, though considerably duller than at the right. Respiration was distinctly audible all over the lung's surface, except in the space corresponding to the superior lobe, where cavernous respiration and cough, with perfect pectoriloquy, were heard distinctly.

* *Traité de l'Auscultation Mediate*, par R. T. H. Laennec.—
Paris, 1826.

DIAGNOSIS.

A tubercular cavity occupies the upper lobe of the left lung.

The dilatation of the right side of the chest is produced by pneumothorax, and the co-existence of the *tintement métallique* proves that the air in the pleura proceeds from a communication between the bronchia and pleura. The medium of communication in this case I conceive to be a tubercular cavity; first, because such is by far the most frequent mode of communication between those parts; and secondly, because the existence of a tubercular cavity in the opposite lung converts the probability of this species of abscess into a moral certainty, of which no doubt could have existed, if the patient had been examined with the Stethoscope, and pectoriloquy found under the right clavicle, before the accession of the pneumothorax.

I attribute the comparatively dull sound on percussion, of the superior part of the thorax, and its less degree of dilatation, to the existence of ancient adhesions, which prevent the air accumulating in that region, between the pleura costalis and pulmonalis.

To recapitulate.—The lesions I expect to find

are, a tubercular cavity in the upper lobe of the left lung; the right side of the thorax distended with air and fluid; (the latter at present exists in small quantity, but its proportion will no doubt go on increasing;) in the right lung a tubercular cavity, communicating with the sac of the pleura on the one hand, and with the bronchia on the other, allowing the air inspired to pass freely into the pleura; and finally, the superior lobe united by old adhesions to its corresponding costal pleura.

This detailed diagnosis was written and handed over to Dr. Cheyne on the evening of my first visit.

March 26th. Had no sleep last night; face expressive of considerable suffering; a bluish tint of lips and nails is perceptible. Says he feels no pain whatever. Cough peculiarly deep and hollow; slight mucous expectoration.

At the right side, sound on percussion continues hollow inferiorly, even over the region usually occupied by the liver, where a full inspiration sounds precisely like blowing into an empty bottle, (*bourdonnement amphorique*.) Speaking, as well as coughing, is now followed by the *tintement métallique*. In the superior part of the thorax the sound on percussion is clear and hollow anteriorly,

where also the respiratory murmur is extinct.
Quantity of gaseous effusion increases.

28th. Does not recollect any sudden aggravation of his symptoms about the period when his breathing became materially affected. Never suffered much pain of right side; thinks on the whole that the other side now gives him, and has for the last three months, uniformly given him the greater uneasiness of the two. Sits up, and walks about. Pulse 120; respirations 36. No change in the Stethoscopic sounds.

April 1st. Pain of left side removed by the application of a blister; dyspnœa increased; number of respirations 38; diarrhœa; profuse night-sweats.

At the right side, sound on percussion is become dull posteriorly in the space corresponding to the inferior portion of the thoracic cavity, where no sound whatever can be heard. *Fluid accumulates.* Above the eighth rib the sound on percussion is hollow, the ordinary inspirations sound like blowing into a bottle. Expiration is followed by a musical sound, resembling the vibrations of a fine wire chord. Coughing produces a peculiar sound, exactly similar to the ringing of a porcelain jar; the voice much more obscurely so.

On making the patient sit up in bed, and shaking him gently by the shoulder, (the Stethoscope being applied posteriorly about the convexity of the seventh rib,) a fluid is clearly heard dashing against the sides of the thorax.

The patient is sensible of this fluctuation, says *he* hears it, though *I* could not without applying my ear. When he suddenly rises from the recumbent posture, three or four drops are heard to fall successively from above on the surface of a fluid. This sound also is most distinctly heard over the seventh rib posteriorly.

In the left lung, pectoriloquy, &c., as before.

Feels no pain whatever in right side. I, in consequence, added to my former diagnosis, that the constant absence of pain probably proceeded from a thick coating of albuminous exudation, the product of chronic inflammation, which lines the pleura, and defends it from the contact of the air.

5th. Thorax more distended. Increase of diameter is become very perceptible superiorly. All the intercostal spaces are protruded. Signs furnished by auscultation and percussion, the same as recorded at the last visit, were distinctly heard to-day by Drs. Browne and Graves, who expressed themselves much surprised at their extraordinary

precision and distinctness. I think that coughing was followed to-day by a greater degree of musical resonance than I had previously heard it. My friend Dr. Graves compared it to the tones of a musical snuff-box. The vibrations of a tuning-key will convey perhaps the best idea of the sound.

11th. Emaciation and debility progressive; night-sweats; dyspnœa does not increase; pulse 120; respirations 32. Feels some slight soreness in right side. Stethoscopic sounds as before, except that they are now heard anteriorly, as well as posteriorly, and as high as the third rib. Below the seventh rib the sound on percussion is dull, and the respiration extinct.

I think it right to mention, that though I employed the Stethoscope to ascertain the precise relative situation of the air and fluid, yet all the sounds above recorded were incomparably more evident to the naked ear.

14th. Profuse night-sweats; colliquative diarrhœa; stools consist of a black matter, resembling coffee-grounds; great prostration of strength; increase of dyspnœa, though it never became extreme up to the time of his death, which occurred on the afternoon of this day.

DISSECTION,

Forty hours after Death.

Present, Drs. Cheyne and Stack.

External appearances. Body well proportioned ; considerable emaciation ; legs and feet slightly œdematous ; the right side appeared considerably more dilated than the left, but on measuring with a tape, the greatest difference was found not to exceed one inch and a half.

On employing succussion, fluctuation was heard by applying the ear to the chest, but was not audible to the bye-standers.

The head was not examined.

Thorax. The right side. A trocar was introduced between the fifth and sixth ribs near their junction with their cartilages ; an immediate rush of air followed, part of which I succeeded in collecting in a large phial filled with water, and inverted over the canula.*

• This gas was submitted to an accurate analysis, and its composition ascertained to be,

On removing the sternum, a vast unoccupied space was observed in the anterior part of the thorax, capable of containing fully two quarts of water. This space had been occupied by air, which may consequently be estimated at that quantity. The lung just appeared above the surface of the fluid, which occupied the posterior region of the thorax; it was closely compressed against the spine, and seemed reduced to one-third of its natural dimensions. The fluid effused might be in quantity about two quarts, was of a yellowish green colour, tolerably clear at its surface, but rendered turbid at bottom by numerous fragments of opaque, puriform flocculi of albumen.

Carbonic acid,	-	8
Oxygen,	-	10
Nitrogen	-	82
		<hr/>
		100

These results coincide very nearly with those deduced by Allen and Pepys from their analysis of expired air. But if, as is generally now believed, the only change affected in atmospheric air, during respiration, be the conversion of a portion of its oxygen into carbonic acid, this gas differs from expired air in the circumstance of the absence of two and a half per cent. of oxygen. This deficiency is probably only apparent, and arises from the absorption of some of the carbonic acid by the water contained in the bottle in which the gas was collected. Adopting this opinion, the gas examined does not differ from the ordinary expired air.

For these particulars I am indebted to my learned friend Dr. Apjohn.

Before touching the lung, in order to guard against an accidental formation of the opening, which I expected to find, an incision was made into the trachea, and the pipe of a pair of bellows introduced. The air passed freely through the lung, and appeared in bubbles at the surface of the fluid, in which it was immersed.

The fluid being removed, the upper lobe of the lung was found in close contact with, and firmly attached to the costal pleura.

The whole surface of the lung, except where it was attached, was coated with an albuminous exudation of a dirty white colour, of several lines thickness, its surface wrinkled, not unlike the rind of a shrivelled apple. The costal, mediastinal, and diaphragmatic pleuræ, were still more thickly coated with this exudation, which, though firmly attached to the subjacent pleura, and apparently incorporated with it, might, by careful dissection, be separated from it, leaving the membrane underneath in a state of perfect integrity.

The lung was now detached ; on its anterior surface, about two inches from the summit of the upper lobe, was discovered a fistulous orifice, capable of receiving my little finger, its margin well defined, rounded, and nearly cartilaginous. A probe intro-

duced passed readily through a series of small tubercular cavities into one of the principal bronchia. At intervals of half an inch below this fistulous orifice existed three small oval superficial ulcers, which, on close examination, did not appear to communicate with the bronchia. They were evidently formed by softened tubercles, developed immediately under the pleura ; for on different parts of the lung's surface there were several similar oval nests of tubercles, some not yet softened, others quite soft, and elevating the pleura, through which they had not as yet formed a passage.

Posteriorly near the root of the lung, and about the base of the superior lobe, immediately underneath its adhesion to the pleura, was another fistulous opening, of half an inch in diameter, which communicated by a long sinuous passage with a large tubercular abscess occupying nearly the whole upper lobe. This passage was lined all through by a highly vascular membrane, exactly similar to that which lined the tubercular abscess, having its surface coated with a layer of lymph. Into this vast abscess was also traced one of the principal bronchial divisions ; its entry into the cavity was within a few lines of that of the sinuous passage above described.

The middle and lower lobes contained several

tubercles. The bronchial glands also were much enlarged, and studded with tubercles.

The left side of chest. This lung was studded throughout with granular tubercles of the size of duck-shot. In the superior lobe was found one cavity, capable of containing a large filbert, and communicating with two or three smaller ones. In the middle lobe* the tubercles were all opaque and whitish. In the inferior many of them were in the first, or greyish, semi-transparent stage.

The heart was small, flaccid, and pale.

Abdomen. All the viscera occupied their natural situations, except the liver, the inferior margin of which nearly touched the crest of the ilium. Mesenteric glands much enlarged, some of them studded with tubercles.

Stomach much distended with flatus; its mucous membrane reduced to a pulpy mass, and easily scraped off with the scalpel.

The ileum was considerably ulcerated near its entry into the cæcum, which, as well as the colon, presented several patches of ulceration, and contained a large quantity of the coffee-grounds matter,

* The left lung was divided into three distinct lobes.

similar to what had been evacuated. This matter was first met with in the cæcum, as the ileum seemed perfectly free from it.

Liver appeared healthy.

This case of pleurisy with pneumo-thorax, differs from any other that I have seen recorded, in the total absence of pain in the side affected, in not having its commencement marked by any violent or sudden symptoms of dyspnœa or pain,* and also in this, that the patient was able almost to the time of his death to dress himself and sit up; whereas M. Laennec expressly states,† that in all the cases which he had seen, the patients were excessively oppressed, and unable to quit their beds. Indeed he lays down these circumstances, as adjuvant diagnostic marks, whereby to distinguish this disease from emphysema. But in this instance such minor distinguishing features were not necessary. The great distention of the right side of chest, its remarkable sonoriety, the total absence of respiration, unless where the lung was attached, the extraordinary

* M. Louis records several cases of perforation of the lungs, in all of which the moment of the rupture of the pleura was marked by a sudden aggravation of dyspnœa, and violent attack of acute pain.—*Recherches Anatomico-Pathologiques sur la Phthisie, à Paris*, 1825. Par P. CH. A. LOUIS.

† *Traité de l'Auscultation Mediate*, tome 2, page 262.

development of the pathognomonic signs, all established, beyond the possibility of doubt, the precise nature of the disease. I shall only add, that the dull sound supervening inferiorly, and gradually ascending, the increasing capacity and sonoriety of the superior part of the thorax, together with the increased extent of surface over which the pathognomonic sounds were heard, did all, and each of them, mark exactly the progress of the disease from day to day, up to the period of its fatal termination.

I know that it has been often urged, as an objection to the use of the Stethoscope, that it is impossible to convey, by description, an accurate idea of sounds; and that for this reason none but those persons who have studied under the author of mediate auscultation, can be sure that they refer each sound to its proper denomination. I can only reply to this objection by stating, that although, during my attendance on the wards of M. Laennec, I never had an opportunity of studying these sounds, the *tintement metallique*, and *bourdonnement amphorique*, yet so precisely did they answer his description, that I felt not the least difficulty in recognizing them; and so perfectly was I convinced of their identity, that I hesitated not, on the evidence of sounds I had never before heard, to pronounce on the existence of a morbid lesion I had never previously seen,

and I appeal to the result, if my confidence was not justified.

I now have the honour of presenting the lung, preserved in spirits, to the Association.

I shall next record a case as remarkable for the erroneous opinion formed of the seat and nature of the disease, as the preceding was for the minute accuracy of its diagnosis.

On the 7th of April, whilst walking through Dr. Ferguson's wards in the Whitworth Hospital, to which he has kindly allowed me admission, my attention was directed by the nurse to a patient, who, she stated, was labouring under the same disease as his predecessor in the same bed, who had died a few days before of diseased heart.

The following is an outline of the case. Owen M'Kenna, æt. 34, a flax-dresser. Thorax excessively deformed, the left side being quite flattened anteriorly. Two months ago was seized, after exposure to cold and wet, with shiverings, cough, dyspnoea, and violent palpitations on going up an ascent, or making any exertion. These symptoms increased progressively. At present his dyspnoea is extreme; violent palpitations; pulse rapid, full, and bounding; tremulous motion of jugulars, but no distinct

regurgitation ; inability to lie in the horizontal position ; face of a dirty aguish complexion ; lips and nails of a dark leaden hue ; feet and ankles œdematous ; cough soft, in long paroxysms ; sputa occasionally tinged with blood. Appearance altogether highly indicative of morbus cordis. Says himself that the beating of his heart causes the bed to shake under him. As he appeared to suffer very much, I only applied the Stethoscope to where I expected to find the seat of the disease.

The heart was felt to pulsate vehemently in a space of three inches circumference, over the cartilages of the fifth, sixth, and seventh ribs. Pulsations stronger over the left, than over the right ventricle. The rythm of the contractions appeared regular, but their sound somewhat duller than natural. Number of pulsations 120 ; of respirations 44. Heart's action so tumultuous as to cause the whole anterior surface of the chest to vibrate under the hand when applied.

These physical signs so far confirmed the impression which the symptoms had previously made on my mind, that (not having the case to treat) I pursued my examination no further, but entered as my diagnosis, *Morbus Cordis. Hypertrophy of both ventricles, especially the left.*

In a few days after I again saw the patient :

dyspnœa rather increased ; lips more livid. I wished to examine the state of the lungs, but he was unable to sit up, as giddiness immediately came on. Anteriorly a ronchus crepitans was heard all over the præcordial region, and all down the right side of the chest. I in consequence added to my former diagnosis, *double pneumonia*.

The heart's action continued tumultuous, and in a few days death put an end to his sufferings.

DISSECTION,

Twenty hours after Death.

To my great surprise the heart was found perfectly well proportioned, at least no alteration of its structure was observed at all sufficient to account for the great derangement of its functions. For although the opening of the foramen ovale was not perfectly closed, yet so effectually did the valve overlap and protect it, that no blood could pass from the one auricle to the other, unless the contracting force of one far exceeded that of the other ; but in this case both auricles maintained their due relative proportions, both as regarded their capacity, and the strength of their parietes.

The lungs did not collapse in the least, and ad-

hered firmly to the costal pleura throughout its entire surface.

The right lung felt perfectly hard, and when cut exhibited a surface studded with miliary tubercles, in their different stages of development, almost as close as they could be packed. Those points not occupied by tubercles were just passing into the stage of hepatization.

The left lung contained in its upper lobe a cavity capable of containing an orange, and communicating freely with the bronchia. The root of the lung had quite an indurated feel, so crowded was it with tubercles. The pneumonia at this side had not passed its first stage, (*engouement*.)

The rationale of the symptoms may, I conceive, be thus stated :—The vibration and pulsations felt over the chest were produced by the solidified lung, transmitting the heart's impulse, which was, no doubt, preternaturally excited in its efforts to propel the blood through the almost impervious lung; which, by presenting similar obstacles to the introduction of air, gave rise to all the distressing symptoms of asphyxia.

The supervention of pneumonia which, notwithstanding repeated venesections, continued to run its course, doubtless aggravated considerably the

violence of these symptoms. The chest too, being flattened over the præcordial region, must have been struck by a larger portion of the heart's surface, than if the ribs had retained their natural convexity.

In this case I need scarcely remark how clearly all the symptoms above recorded seemed to indicate disease of the heart. The Stethoscopic examination too, being incomplete, only tended to confirm the error ; so much so, indeed, that had I not learned from experience to distrust the accuracy of my Stethoscopic observations, when contradicted by dissection, I should very probably bring forward this case to prove the inutility, or even mischief of auscultation, which I now adduce as an argument in its favour, for I think I am warranted in asserting, that a more careful investigation into the history of the disease, aided by an attentive and accurate examination with the Stethoscope, would have been the only possible method of detecting the fallacy of the symptoms, and of recognizing the true nature of the disease ; for had the superior lobe of the left lung been examined under the clavicle, or in the supra-spinal fossa, (and no examination should ever be depended on which is not made over every point of the thorax,) it is utterly impossible that (from the presence of some or all of the pathognomonic sounds of pectoriloquy, cavernous respiration, and cough,) I should not have detected the existence of a tuber-

cular cavity, when my attention must infallibly have been awakened to the real nature of the disease.

In bringing forward this case my principal object has been, to illustrate a fact of perhaps not so unfrequent occurrence as some persons imagine ; I mean where the appearances on dissection being found at variance with the prognosis founded on the employment of auscultation, that blame has been exclusively attributed to the Stethoscope, which should have been at least shared by the Stethoscopist. That such errors do occasionally occur, I am the more disposed to suspect from having had, for a considerable time, repeated opportunities of witnessing the unvarying accuracy with which M. Laennec detected pulmonary disease, even in its most occult and complicated forms, and from having learned from personal experience the extreme difficulty of educating the ear, so as to arrive at any thing like his degree of precision and accuracy ; a difficulty which, in my opinion, constitutes the most valid objection that has been urged against the general utility of the Stethoscope.

The next case I have selected is intended to illustrate the character and Stethoscopic phenomena of hysteric cough, and to afford proof, if indeed proof be necessary, of the intimate connexion

which subsists between precision in diagnosis and success in treatment.

Mary Bohey, æt. 45, married, but who never had children, first applied at the Talbot Dispensary in the commencement of December last. She then laboured under violent conjunctitis of both eyes, with transparent ulcers on the left cornea. For this affection she was repeatedly bled, both locally and generally, and took large doses of tartar emetic; but the progress of the disease was only arrested by doses of calomel and opium, repeated every second hour, until salivation was produced; from which period the local inflammation and constitutional irritation rapidly subsided. Early in January she complained only of weakness, and ceased to apply for medicines.

On the 25th of January she again applied at the Dispensary, stating, that her strength returned but slowly, that her appetite was bad, and that her spirits were so low, that she used frequently to burst into involuntary fits of crying. To these ailments was superadded, about a fortnight since, a cough, at first slight, but daily becoming more urgent, until at present it comes on in paroxysms of fifteen minutes long, during which the face becomes purple, the eyes suffused, as if starting from their sockets, the head feels ready to burst asunder, and the chest is violently constricted. In short she seems in imminent danger of suffocation. These violent paroxysms are never

succeeded by expectoration, and yield only when the patient is perfectly exhausted. The longest and most urgent fits come on when she first goes to bed, and when she gets up in the morning. Pulse 120, small and vibratory ; bowels constipated ; has occasional attacks of colicky pains, during which the abdominal muscles are spasmodically constricted.

On account of her great fatness, no information could be derived from percussion.

On applying the Stethoscope the respiratory murmur was heard quite pure all over the anterior surface of the thorax. Posteriorly at the right side respiration pure. At the left side respiratory murmur also pure, but much more feeble than at the right.

This examination was made during an interval between the paroxysms. The agitation, however, excited in the patient's mind brought on a few convulsive sobs, which were quickly followed by a most frightful paroxysm of coughing, during which she literally gasped for breath.

I again applied my ear, and was surprised to find the respiratory murmur perfectly inaudible all down the left side posteriorly, where but a few minutes before I had heard it distinctly, though more feebly than at the opposite side, where also the respiration

was scarcely to be heard, except during the forced inspirations which immediately preceded the act of coughing.

The symptoms of hysteria in this case were too evident to be mistaken, and the probability of the cough being only a sympathetic affection, was, by the result of auscultation, converted into certainty. My treatment was directed accordingly, and I ordered $\mathfrak{z}\text{i}$. of the powdered valerian to be taken three times a day, a practice which I had seen employed with eminent success at Naples. Three doses were taken on the first day : cough less troublesome on lying down ; enjoyed some sound sleep during the night. After the fourth dose the cough no more came on in paroxysms, other symptoms too experienced a proportionate improvement, and on the third day she was perfectly tranquil, and free from cough.

The principal Stethoscopic interest of this case consists in the sudden cessation of the respiratory murmur in a portion of the lung, where, but a short time previously, it was distinctly audible, and at the termination of the paroxysm was again to be heard ; consequently all idea of organic lesion, or of inflammatory action, was entirely excluded.

I shall not attempt to found an argument on this single case, but for the present only throw out the

suggestion of how far spasm of the transverse fibres* of the bronchial tubes and their sub-divisions may have contributed to produce this phenomenon. I now present a specimen of a bronchial tube at its primary and secondary divisions, in which these fibres have acquired a considerable volume, as indeed they uniformly have done in every case of protracted dyspnœa that I have had an opportunity of examining. I have also observed that in horses, whose lungs are emphysematous, these fibres are greatly hypertrophied, form bands of considerable size and strength, and present an appearance evidently muscular; from which I would infer, that, in thus obeying the law of "muscular development being proportionate to muscular action," they establish their claims to muscularity, and are consequently susceptible of spasm. And that in this instance they were spasmodically contracted, is, I think, rendered at least probable from the co-existence of a spasmodic affection of other muscles, from the paroxysm terminating only when the contractile force of the muscles appeared exhausted, from there being no expectoration, as should be expected if the air passages were obstructed by a viscid mucus, or if the mucous membrane of the bronchia and cells had been congested by a determination of blood, and finally, from the pulmonary affection yielding along

* See Reisseissen de Fabrica Pulmonum.

with the disease to the use of antispasmodic medicines.*

Since writing the above my friend Dr. Graves has communicated to me the particulars of a case almost precisely similar, that of a lady whose constitution was impaired by protracted illness, and who, in addition to other nervous and spasmodic affections, was subject to violent paroxysms of coughing, especially on first lying down in bed, when the fit generally continued for hours together, and terminated only when she was literally unable to cough any more.

An antispasmodic draught, with a large dose of ether in it, invariably produced such effects in cutting short the paroxysm, as to acquire from her assistants the name of "The Magical Bottle."

I shall adduce but one case more, of pneumonia supervening during the course of fever, and recognized by the Stethoscope, when its existence was not even suspected, and successfully treated by active antiphlogistic measures, when every symptom seemed to indicate the propriety of tonics.

* For further particulars respecting spasmodic affections of the lungs, I beg leave to refer the reader to the chapter on Spasmodic Asthma in the last edition of M. Laennec's immortal Treatise on Mediate Auscultation.

On the 12th of February I was called to see Wm. Nangle, a strong, plethoric man, æt. 30, who, after exposure to wet and cold, in the discharge of his fatiguing duties as watchman, was seized with shivering, headach, nausea, and pains in all his limbs.

On the 4th day of his illness he presented the following symptoms : violent headach ; face flushed ; eyes brilliant ; intellectual and sensorial functions rather exalted than perverted ; skin hot and dry ; abdomen excessively tender on pressure, especially over the stomach and cæcum ; bowels constipated ; tongue parched and very red ; pulse 98.

Fiat statim V. S. ad $\frac{3}{4}$ xiv.

℞. Pulv. Rad. Ipecac. gr. ij.

Rhei, gr. xij.

Magnesiae, gr. vi.

Fiat bolus h. s. sumendus. Mist. sennæ cras mane.

5th Day. Two copious stools ; face less flushed ; headach and tenderness of abdomen continue ; pulse 110 ; tongue still red and dry.

Hirud. No. xiv. epigastrio.

Fotus tepidi abdomini.

Rept. bol. h. s.

6th Day. Manifest improvement ; skin has lost its arid, rough feel ; pulse 100, full and soft ;

tongue is become moist ; abdomen less painful on pressure.

Contr. fatus tepidi et bol. h. s.

I discontinued my visits, supposing him convalescent.

On the 9th day I was again called to see him, and informed that he had had a decided change for the worse on the day preceding. The alteration in the expression of his countenance struck me forcibly ; it had assumed a peculiar bewildered aspect, and dirty olive hue. I also observed great prostration of strength ; much agitation and despondency ; abdomen still painful on pressure ; tongue loaded with a dark brown crust ; pulse small and rapid ; respirations hurried, (24 ;) slight cough, but no expectoration ; constant moaning, but no distinct complaint of pain. His attendants stated that he had been delirious during the night. On examining the state of the respiratory organs, a ronchus crepitans was heard under the right mamma ; inferiorly and posteriorly at the same side the respiration was bronchial, and the sound on percussion perfectly dull. *Pneumonia already arrived at hepatization in the inferior lobe, and advancing upwards.*

Fiat statim V. S. at 3xiv.

R. Tart. antim. et potas. gr. vj.

Aquæ distillat. 3iij.

Syrup. aurant. 3i. M.

Sumat 3ss. omni hora.

10th Day. Blood slightly buffed ; tartar emetic tolerated ; tongue rather less loaded ; countenance improved ; other symptoms as yesterday. No alteration in the Stethoscopic sounds.

℞. Tart. antim. et potas. gr. x.

Aquæ distillat, ℥iij.

Syrup. aurant. ℥i. M.

Sumat ℥ss. omni hora.

11th Day. Says he feels much better ; pulse still quick, but soft ; skin moist ; countenance continues to improve ; tongue clean and humid ; cough followed by mucous expectoration. Under the right mamma the respiratory murmur is now audible, but still accompanied with a slight degree of crepitation ; posteriorly and inferiorly, where the respiration was bronchial, the ronchus crepitans redux now begins to be heard. *Pneumonia marches towards resolution.*

Rep^t. solut. tart. antim. ut heri.

12th Day. Progressive amendment.

I shall not follow him through the period of his convalescence, but merely state, that it proceeded without interruption. The dose of emetic tartar was gradually diminished, and withdrawn altogether on the seventh day after the commencement of its use.

Here was a case of fever marching progressively towards convalescence, when, without any assignable adequate cause, an alarming change suddenly supervened, marked by prostration of strength, despondency, low delirium, and other adynamic symptoms. At this critical juncture the application of the Stethoscope revealed the existence of active inflammation in the right lung, when the cough was so slight as almost to escape observation, the expectoration, if any, swallowed, and the hurried respiration a symptom too equivocal in the advanced stage of the disease to announce the positive existence of pneumonia, or to authorize such active treatment as was in this case successfully employed.* Surely the information gained from the Stethoscope in this instance was practically useful.

I might, if necessary, multiply cases to exemplify

*M. Andral, in the first vol. of his *Clinique Medicale*, states, as the result of his numerous *post mortem* examinations, that latent pneumonia is by no means an unfrequent complication of fever; and that as inflammation of the lungs may proceed even to the disorganization of these organs, without betraying any apparent disorder of the respiration, any characteristic expectoration, or alarming cough, so also may those symptoms which usually indicate organic affection of the thoracic viscera, make their appearance during the progress of fever, and yet no trace of inflammation, no organic lesion whatever be discoverable in the respiratory organs. Hence, he adds, arises the indispensable necessity of frequently employing auscultation and percussion during the course of fever.

the extraordinary precision and accuracy of diagnosis which may be attained in the various affections of the thoracic viscera by the employment of auscultation and percussion, but as many such cases have been laid before the public, and as this paper has already exceeded the limits which I originally designed it should occupy, I shall refer the reader, who wishes for further evidence on this interesting subject, to the writings of Drs. Forbes,* Stack,† Graves, and Stokes,‡ of this country, and to the more extensive observations and researches recorded in the works of M. Bertin,§ Louis,|| and Andral,¶ of Paris. Indeed it is difficult to conceive a stronger body of evidence than that furnished in favour of auscultation by the results of the numerous cases and dissections recorded by the last named author in the second and third volumes of his *Clinique Medicale*. Of the perfect accuracy with which these cases and observations have been related I am convinced, from having myself observed many of them

* Original Cases, with Dissections and Observations, illustrating the use of the Stethoscope. *London*, 1822.

† Dublin Hospital Reports, vol. iv.

‡ Dublin Hospital Reports, and Clinical Reports. *Dublin*, 1827.

§ *Traité des Maladies du Cœur et des Gros Vaisseaux*, par Ch. J. Bertin. *Paris*, 1824.

|| *Recherches Anatomico-Pathologiques sur la Phthisie Pulmonaire*. *Paris*, 1825.

¶ *Clinique Medicale*, tom. 2 et 3.

during the period of my attendance on the wards of "La Charite," and from my intimate knowledge of the unimpeachable candour and veracity of the author.

It is, therefore, with peculiar satisfaction that I transcribe the opinion which this indefatigable pathologist has formed of the utility of the Stethoscope, an opinion which I know to be adopted from an impartial comparison of the Stethoscopic phenomena, observed in many hundred cases, with the morbid appearances found on dissection. Speaking of the diseases of the respiratory organs and their diagnosis, he concludes with the following observations : " Grâce a la merveilleuse découverte de M. le Professeur Laennec, ce diagnostic peut être souvent établi d'une manière aussi positive que la luxation la moins compliquée ou de la plus simple fracture. Il est un certain nombre des pneumonies dans lesquelles on peut suivre par l'auscultation les diverses phases de l'alteration du poumon, et de son retour a l'état sain, avec une aussi rigoureuse précision que l'œil suit a l'extérieur les diverses périodes de la cicatrisation d'une plaie. Il est des affections du cœur dans lesquelles la nature de la lésion organique peut être presque aussi exactement déterminée par le sens de l'ouïe, que la disposition d'une tumeur cutanée peut être appréciée par la vue, ou l'état du col utérin par le toucher. Cependant l'observation clinique offre encore beaucoup des cas dans les-

quelles le diagnostic reste tres obscur ; elle en presente d'autres dans lesquels la nature meme de l'affection est encore un point de litige.”*

Whilst I most heartily concur in these encomiums bestowed on the general utility of auscultation, I as candidly acknowledge the obscurity which still hangs over some particular forms of pulmonary disease ; and if I do not now more particularly allude to the difficulties which an accurate discrimination of some of the nearly allied forms of these diseases still presents, I wish distinctly to state, that my silence does not proceed from a wish to conceal the fact, but because the number of observations that I have as yet collected, does not enable me to decide as to which of those difficulties may arise from the occult or complicated nature of the disease, which from the necessary imperfections of auscultation, and which from my own incompetence to derive from it all the information it is capable of affording.

Before concluding these remarks, I wish briefly to notice the existence of a mistaken supposition, that the employment of auscultation and percussion was intended to supersede the consideration of all other means of investigating the nature and extent of thoracic disease. Such an erroneous idea

* Clinique Medicale, tome ii. Avant-propos, page 6.

must proceed from a very imperfect acquaintance with the principles laid down in M. Laennec's treatise on mediate auscultation, every page of which proves, "by precept and example too," that auscultation should ever be considered as a supplement to, not as a substitute for, the history and symptoms of the disease under consideration; and that it is only from an intimate acquaintance with these and every other source of information, direct or indirect, aided by the physical signs furnished by auscultation and percussion, that we can in any case arrive at that precision of diagnosis, which frequently enables the physician to pronounce as unhesitatingly and as accurately on the nature, extent, and probable termination of a disease situated within the thorax, as on those of an ulcer seated on its external surface.

SEQUEL
OF THE
CASE OF MARY RIORDAN,

PUBLISHED IN
TRANSACTIONS OF ASSOCIATION, VOLUME IV.

By W. PICKELLS, M. D.,

ONE OF THE PHYSICIANS TO THE FEVER HOSPITAL, CORK.

Read by Dr. O'Brien, March 5, 1827.

THIS case, I presume, has terminated favourably. The result is, that under a persevering use of the turpentine, in doses progressively augmented since last communication from four to six ounces, the larvæ of the beetle, which appear to have been the principal source of annoyance, were at length destroyed; and she now, I understand, enjoys almost total immunity from her long protracted and complicated diseases.

The registry, which will be found in the Appendix, commencing in January, 1824, a few days

after the date of my last communication, and ending with the last discharge of beetle larvæ, under the use of the turpentine, in June, 1825, that is, comprising a period of one year and a half, exhibits the number of beetle larvæ submitted to my observation as having been voided, according to the order of dates, during this period, together with the respective dose of turpentine annexed, when, as in almost every instance was the case, the discharge was the effect of such dose. No emetic was given; consequently, with the few exceptions in which they were vomited without medicine, the discharge was always *per anum*. The total number registered during this period amounted, I find, to above thirteen hundred, all of which I distinctly reckoned.

When preserved alive, in order to prevent the possibility of their being presented for observation a second time, I took the precaution, in most instances, of causing them to be burned in my presence. When under the operation of six ounce doses of turpentine they came away all dead; in consequence of the overwhelming numbers, together with the putrid and disorganized condition in which they were voided, distinct enumeration became impracticable.

Only one "winged one," a pupa of blaps probably from the account, was known to have been voided, namely, in May, 1824; but this, as well as

several larvæ of tenebrio, was devoured by the accompanying larvæ of blaps, before my visit. The larvæ of blaps appeared to devour those of tenebrio in preference to each other. The beetle larvæ of both species continued to the last to exhibit great diversity of size. One of the last discharged of blaps measured one inch, seven and a half lines in length, and in girth six lines and three quarters. I had frequent opportunities, during the latter end of the summer and autumn of 1824, of seeing the beetle larvæ in the act of casting the cuticle. The time varied from some hours to twenty-four, or upwards, never to seventy-four, as by an error of the press stated in my last communication. Two immediately after having cast the cuticle, were devoured by their fellows.

Besides the beetle larvæ, dipterous larvæ continued to be voided at frequent intervals, during the period under consideration, as well by the stomach, as *per anum*; in some instances without medicine, but more usually under the operation of castor oil. They were commonly alive, and in vast numbers. It is remarkable that the turpentine, even in the strongest doses, appeared to have no effect in killing them. They were oftener ejected than is entered in the registry. What strikes me as anomalous is, that I find distinct notices of their discharge, in several instances, during this period, in winter. Four, voided in May, 1824, became perfect flies shortly

after having been given to Dr. Thomson. Dr. Thomson in his letter, which will be found in the Appendix, professes himself not quite decided as to the species, but is strongly inclined to think it the “*musca larvarum*, *Linn.*” The larvæ had appeared to him to be similar to those ejected for the first time in the preceding autumn.

During the month of July, 1825, I succeeded in obtaining nearly thirty perfect flies from larvæ which had been voided, some days after the beetle larvæ had ceased to come away, under the operation of the turpentine. The larvæ had been enclosed in an empty pill-box, with the cover minutely perforated. Upon examination on the tenth day of their confinement, they were found to have assumed the pupa state. Upon further examination in four days more, the whole had become perfect flies, their evolution having been probably facilitated by the extreme heat of the weather. They were all dead. Dr. Thomson, to whom I submitted them some days since, preserved in spirits, is decided in pronouncing them to be the *musca vomitoria*, or blue fly.

Ascarides, similar to the supposed *ascaris felis*, formerly thrown up, (Fig. 8, Plate 3,) were also voided in several instances during the period under consideration, as well *per anum*, as by the stomach. I have seen about fifty of various sizes. They too, notwithstanding the great doses of turpentine em-

ployed, were usually evacuated alive, and, in a majority of instances, without medicine. In the first instance, however, of the exhibition of a six ounce dose of turpentine, a number of them, together with the beetle larvæ, came away all dead. They came away usually in groups of six or more. I have sometimes found a whole group knit together by the extremities. The common lumbricus (*ascaris lumbricoides*) was also eliminated in some instances. One measured upwards of a foot.

Since the supposed *ascaris felis*, thrown up in April, 1822, none similar had made their appearance until the latter end of February, 1824, an interval of one year and ten months. In November, subsequent to the cessation of beetle larvæ in June, 1825, a group of eleven similar ascarides were voided; and in March last (1826) a group of nine were thrown up alive, during profuse hæmatemesis, attended with convulsions occasioned by a fright.

Towards the end of January last I learn that a swarm of very minute dipterous larvæ descended *per anum*. No beetle larvæ have presented themselves, since their cessation, under the use of the turpentine, an interval, from the time I write, of one year and eight months. Are we authorized to presume that they are extinct? She continued to discharge beetle larvæ in every instance of the exhibition of an emetic, or dose of turpentine, and in some

instances without medicine, during a period of nearly three years and three months. The number registered, as having been submitted to my observation, during this whole period, amounts, I find, to nearly two thousand, which I distinctly reckoned. All, with the exception of perhaps two or three hundred, were alive. There were only about fifty larvæ of tenebrio. The number of beetle larvæ registered, furnishes, however, for a variety of reasons already mentioned in the narrative, no approximation to the actual amount ejected. The discharge of "winged ones" was confined almost exclusively to the autumn of 1822, the year of the commencement of the expulsion of insects.

During a considerable part of this period I regret that I was absent in Spain, otherwise I have no doubt that many more specimens of this description would have been preserved. The number obtained was five pupæ, and two imagos, which proved to be those of blaps mortisaga, and to have been deduced from the beetle larvæ. Several of the dipterous larvæ were fast changing, or had already changed into the pupa state when ejected; except those, however, mentioned by Dr. Thomson and myself, no perfect flies were obtained.

Convulsions and hæmatemesis, with the respite of a month in one or two instances, continued obstinate to the last, during the expulsion of beetle larvæ.

Convulsions were more frequent than hæmatemesis. Mania, or delirium, was also frequent, attended in one instance with considerable injury to her person in the necessary efforts used by a number of persons to rescue her in a nearly successful attempt to precipitate herself from the window of her apartment, some stories high, into the street. In another instance her arm was dislocated in consequence of a fall down a flight of stairs, occasioned by her being seized with convulsions while in the act of ascending. The convulsive paroxysms partook latterly more of the hysteric character, being accompanied with consciousness of external objects and occasional weeping, and in one or two instances, with long continued, involuntary laughter. They were stopped for a moment or two, in a few instances, by a person directing the breath on the tympanum of the ear, or, as the common people express it, "by a whisper."

Convulsions and hæmatemesis have been of very rare recurrence since the cessation of the beetle larvæ. She had had no return of either affection since the instance already mentioned in March last, until within the last fortnight, under the pressure of severe mental affliction.

Though enjoying almost total immunity from the other diseases, under which she had so long laboured, that remains which is so inveterate and difficult of remedy in this unhappy country, cheer-

less poverty! She had laboured under convulsions and vomiting of blood, with greater or less degrees of severity, during a period, previous to the cessation of beetle larvæ, of eight years. During this protracted period, the quantity of blood thrown up from the stomach, without including the amount evacuated by other channels, was, from every thing which I have seen or heard, so immense as to excite astonishment that the sufferer should at this day survive. During intervals, not very unfrequent, of this period, vomiting of blood recurred daily. Hence, though under the agency of the oil of turpentine a great proportion of the beetle larvæ passed downwards, yet I have little hesitation in re-stating my opinion, that the stomach was the nidus of these insects, which, from the formidable structure of their jaws and feet, appear evidently to have been the chief tormentors. Occasionally these animals were found embedded alive in the grumous blood thrown up from the stomach.

Though the turpentine, until augmented to the enormous extent of six ounces in each dose, failed to destroy the larvæ of the beetle, its employment, in doses of five ounces, was signalized by the complete removal of the retention of urine, under which she had so long laboured. This event dates from August, 1824, some hours after taking a five ounce dose of turpentine, which brought away fifty-nine larvæ of blaps alive. So sudden and profuse a gush

of urine followed, that Surgeon Bull and I were sent for in the greatest alarm, under an apprehension that the bladder had burst. Blood came away at first, intermixed with the urine. The catheter had been introduced the evening before. The pain at the time of our visit appeared to be most excruciating, and was accompanied by the most violent local spasms of the vagina and bladder, which, however, were stopped in the manner formerly pointed out in a Latin note. In having recourse to this mode, it is essential to mention, that the means employed should not be desisted from for several minutes after the cessation of the convulsions, otherwise they are apt to return. The urine which remained in the bladder was drawn off by the catheter, and had all the characters of having been just secreted. The urethra was so much dilated as to admit the finger. She lay in a state of stupor until the following evening, and the morning afterwards voided a great number more of larvæ of blaps, of which forty-nine were preserved. Since this event, up to the present day, she has never required the catheter, though previously she had been wholly dependent on it during a period of nearly four years.

The efficacy of the turpentine, as an emmenagogue, continued to be evinced by the catamenia coming on in several instances immediately after a dose. They have continued, with some considerable interrup-

tions, to flow since. Their return was for a long time always accompanied by convulsions and hæmatemesis. The bowels have also become regular without medicine. The fistulous ulcer in ano healed long since.

Throughout the greater part of the period included in the registry, the turpentine, it will be perceived, was given in doses of which, I believe, there is no example on record. The fact of her having taken it in these doses I am enabled to attest from personal observation, having repeatedly caused her to take it in doses of five and six ounces at the Dispensary of this city, to which I was then attached, in presence of other physicians of the establishment. In those instances the effect on her head, from long use, had been so greatly alleviated, as not to prevent her walking home, the distance of a street or two, immediately after. Her head, however, commonly continued giddy for a few days after such doses. She had been taking the turpentine since November, 1822, with tolerable regularity, in doses progressively augmented from three or four tea-spoons full, diluted, to six ounces, during a period of nearly three years. It was the common oil of turpentine, not the rectified, which was always used. Under its influence her whole person constantly and powerfully exhaled the peculiar smell of the fluid.

Five larvæ of blaps, including two of the largest

size, were killed by less than five minutes' immersion in common rape-seed oil. The repugnance of some insects to oil is said to be such, that in order to confine them in any given direction, it is only necessary to trace a line of oil in that direction. The dipterous larvæ were killed in eight or ten minutes in turpentine, in three in vinegar, and in not less than two or three hours in castor oil. On the other hand, two very large larvæ of blaps were not killed by an immersion of ten minutes in vinegar; two less large were killed in less than ten minutes. Three very small larvæ of tenebrio were killed in one or two minutes in common spirits.

The cutaneous eruption, which occurred on two occasions during the year 1823, returned in autumn, 1824. In its general character it resembled herpes, consisting of ulcers in various parts of the body, the face, arms, and hands exempted. These ulcers sometimes discharged profusely, and there was severe itching. It was attended in one instance, as formerly mentioned, with a bubo under the axilla which suppurated, and afterwards with a similar swelling in the groin which was resolved. The eruption in every instance continued out upwards of a month, though treated with sulphur ointment, &c. I know not whether it might have been connected with the exhibition of the turpentine, as a rash, attended with an almost insupportable irritation, is said in some habits to be connected with its use.

She had been liable to no cutaneous affection previous to the exhibition of this medicine, nor has she been subject to any since its discontinuance.

Since last publication the experiments of Mr. Clear, to obtain perfect insects from the larvæ ejected, have successfully terminated, and fully confirm the opinion formed by Dr. Thomson. From his paper annexed it appears that one of the larvæ, of which such great numbers were ejected, proved to be *blaps mortisaga*, and that the other larvæ proved to be *tenebrio molitors*. The comparatively small size of the *tenebrios*, thus obtained by Mr. Clear, militates forcibly against the supposition of the two insects, which it is said flew, having been of this species, unless the size of the insects in question was greatly exaggerated by terror and astonishment. With regard to one, that which it is said was of a green colour, Dr. Thomson is now led to suggest, from the circumstance of the *musca vomitoria* having been obtained in the way already mentioned, that “a *musca* of similar habits, (*musca Cæsar*, *Linn.*) might have appeared after this manner, viz. by having passed into the pupa state, and being arrived at maturity, a shock of some sort, after it was thrown up, might have burst open the containing case, and liberated the perfect insect.” Dr. Thomson, however, suggests this as a thing rather not impossible than probable. The ominous epithet, *mortisaga*, or death presaging, was applied, according to Fa-

bricius, from a superstition prevalent in Sweden, that its appearance in a house presages death to one or more of the inmates. A similar prejudice has in these islands stigmatized the insect emphatically called the “death-watch,” which, according to Dr. Shaw, is a species of beetle. In Ireland both *blaps mortisaga* and *tenebrio molitor* are known indifferently by the vernacular name of “carogue,” a name at the mention of which the hearer thrills with horror and disgust. In ancient Egypt, on the contrary, the beetle, it is well known, was held sacred, and occurs on their monuments as the hieroglyphic of the Sun or of the Divinity. Among the Egyptian antiquities preserved in the British Museum is a most colossal figure of this insect, placed on an altar, with a priest kneeling before it. Mr. Baker, in his paper in the Philosophical Transactions, cannot imagine that the Egyptians, a wise and learned people, would show so much regard to a creature of so mean an appearance, without some extraordinary reason, and asks, “is it not possible they might have discovered its property, so wonderfully exemplified in *blaps mortisaga*, of being able to subsist a very long time without any visible sustenance, and therefore they made it a symbol of the Deity.” Among the ancient Jews, whose celebrated legislator passed the early portion of his life in Egypt, the beetle was included in the catalogue of clean animals which were permitted to be eaten according to the Levitical law.

A question, very embarrassing in the history of the present case, is, to account for the constant supply of the larvæ of blaps. It might be easily solved upon the supposition of these insects, in whatever way originally introduced, having continually propagated within. But a serious objection occurs at the outset. If, as stated by Dr. Thomson in his first communication, these insects propagate only in the imago, or perfect state, how reconcile with this the fact, that within a period of better than two years and a half, previous to the disappearance of the larvæ of blaps, only two insects in the more advanced stages, are known to have been voided, one, the imago, not quite developed, obtained in September, 1823, the other, probably a pupa of the same species, thrown up in May, 1824, while the larvæ continued to the last to be voided of different sizes, some so extremely minute, compared with others, as to suggest the expression of the patient of their having been "only just born." It would appear then that they must have been continually taken in from abroad.

In the nature of her food there was nothing peculiar. The potatoes and bread were purchased at the public places of sale, and from her extreme poverty, were very rarely kept from one day to another, so as to be exposed to the contact of beetles. The water which she drank was the common pipe-water. The practice of eating chalk had not been repeated

since its discontinuance, as formerly mentioned; and during a residence of many years in the one room, on an upper floor, a situation which is not the usual haunt of such beetles, she does not recollect to have seen a “carogue” in it.

Yet it cannot, on the other hand, be denied that there are considerations which countenance the idea of the insects having been continually derived from abroad. In the first place the analogy of the dipterous larvæ, which it is quite evident were supplied in this way. An argument of the same sort may be deduced from the congener larvæ of *tenebrio*, which continued to show themselves occasionally, and of different sizes, during almost the whole period of the evacuation of larvæ of blaps.

Mason Good* intimates that the larva of the *scarabæus pilularius*, or *volvans*, has been in some instances eliminated from the human economy.

It may be satisfactory to some of my readers to learn, that the fact of the discharge of larvæ of blaps, in the present case, does not rest singly on my testimony. Under the operation of emetics it was witnessed more than once by the following much respected individuals, among others of this city, viz. Rev. Dr. Quarry, Rev. Mr. Leslie, Mr. Tottenham, and Mr. Gosnell. With regard to the suspicion

* Study of Medicine, vol. 1.

of imposture on the part of the patient, it has been stated by Dr. Thomson in his first communication, that the larva of blaps is scarcely known as such; and Mr. Drummond, Curator of the botanic garden near this city, who has formed an extensive collection of insects found in the neighbourhood, had never met with the larva of this insect previous to its ejection by the patient. How incredible, then, (to say nothing of the other insects, and the supposed *ascarides felis*,) that the wretched patient should have been able to procure a supply of larvæ so rarely to be met with, in such numbers, and during so many years. It may be further stated, that from the crowd of inmates of the same house, the females of whom had all uninterrupted access to her room, her door being scarcely latched or bolted, a course of imposture seemed next to impossible.

Though the present is, I believe, the only case on record in which larvæ, pupæ, and imagos of the same insect have been obtained, yet, in addition to the cases more or less analogous, which have been already referred to, many others might be cited, proving, from the experience of the past, that insects, as well as other extraneous animals, may occasionally become denizens of the human viscera during life. In what the peculiar predisposing cause consists appears to be a mystery which physiology has not yet explained.

CORK, *March 3, 1827.*

APPENDIX.

REGISTRY of Beetle Larvæ, Dipterous Larvæ, and supposed Ascarides Felis, submitted to my observation during a period of one year and a half.

1824.

- Jan. 1. Ten of blaps, alive, from four ounces of turpentine.
17. Five of blaps, dead, from four ounces.
27. Eleven of blaps, six of them dead, from four ounces.
- Feb. 1. A discharge of dipterous, without medicine, in consequence of vomiting and purging.
6. Five of blaps, without medicine, in consequence of a purging.
7. A discharge of dipterous without medicine.
28. Three of blaps, and a great number of supposed ascarides felis, vomited without medicine.

- Mar. 11. Four of blaps, alive, from four ounces.
16. Five of blaps, and three of tenebrio, all alive, from four ounces and a half.
27. Fourteen of blaps, ten of them dead, from four ounces and a half.
- April 7. Six of blaps, five of tenebrio, all alive, from four ounces and a half.
13. Seven of blaps, alive, from four ounces and a half and two drachms.
27. Eight of blaps, alive, from better than four ounces and a half.
30. Ten of blaps, and five of tenebrio, all alive, from better than four ounces and a half.
- May 4. Ten of blaps, one of them dead, from better than four ounces and a half.
11. Fourteen of blaps, alive, from four ounces.
In course of same day took castor oil, which brought off innumerable dipterous.
12. A swarm of dipterous, same as day before, together with an ascaris felis, without medicine.
15. Seventeen of blaps, alive, together with an ascaris felis, from five ounces.
19. Twenty-seven of blaps, four of them dead, from five ounces.
22. Eleven of blaps, and three of tenebrio, all alive.
26. Fifteen of blaps, alive, from five ounces.

- June 3. Ten of blaps, and five of tenebrio, all alive, from five ounces.
10. Fifteen of blaps, and three of tenebrio, all alive, from five ounces.
15. Twenty of blaps, alive, from five ounces.
18. Sixteen of blaps, and two of tenebrio, all alive, from five ounces.
24. Twenty-four of blaps, and one of tenebrio, all alive, from five ounces. On same day a discharge of dipterous after taking castor oil.
30. Nine of blaps, and two of tenebrio, all alive, from five ounces.
- July 15. Fifteen of blaps, alive, from five ounces.
19. Upwards of thirty of blaps, alive, from five ounces.
- Aug. 6. Thirty-eight of blaps, and one of tenebrio, all alive, from five ounces.
12. Fifty-nine of blaps, alive, from five ounces.
14. Forty-nine of blaps, voided *per anum*, without medicine.
20. Thirty-five of blaps, alive, from five ounces.
26. Forty-three of blaps, and two of tenebrio, from five ounces.
- Sept. 3. Forty-nine of blaps, alive, from five ounces.
10. Forty-four of blaps, alive, from five ounces.
16. Forty-one of blaps, alive, from five ounces.
22. Forty-five of blaps, alive, from five ounces.

- Sept. 25. Thirty-eight of blaps, alive, from five ounces.
29. Thirty-one of blaps, alive, from five ounces.
- Oct. 2. Forty-four of blaps, alive, from five ounces.
6. Thirty-three of blaps, and one of tenebrio.
10. Twenty-five of blaps.
13. Thirty of blaps, alive, from better than five ounces.
16. Twenty-five of blaps, alive, from five ounces and a half.
21. Nineteen of blaps, alive, from five ounces and a half.
- Nov. 5. Twenty-two of blaps, alive, from five ounces.
17. Seventeen of blaps, vomited alive, without medicine.
- Dec. 8. Five of blaps, vomited alive, without medicine.
16. Twenty-one of blaps, alive, from five ounces and a half.
22. A swarm of dipterous, and eight ascarides felis, all alive, without medicine.
- 1825.
- Jan. 17. Two of blaps, and six ascarides felis, voided *per anum*, without medicine.
- Feb. 1. Sixteen of blaps, alive, from five ounces and a half.

- Feb. 17. Thirty-one of blaps, all dead, besides innumerable other beetle larvæ all dead, and six ascarides felis dead, from six ounces.
- Mar. 10. Twenty-nine of blaps, all dead, besides innumerable other beetle larvæ, all dead, from six ounces.
26. Fifty-one of blaps, all dead, from six ounces.
- April 7. Ten of blaps, all dead, from six ounces.
27. Innumerable beetle larvæ, all dead, from six ounces.
- May 5. Thirty-seven of blaps, all dead, from six ounces.
10. Twenty-seven of blaps, all dead, from six ounces.
24. Twenty-two of blaps, all dead, from six ounces, together with a group of very small ascarides felis.
31. Thirty-one of blaps, all dead, from six ounces.
- June 21. Fourteen of blaps, all dead, from six ounces.
30. A swarm of dipterous larvæ alive.
- July 5. None from six ounces.
20. None from six ounces.
- Sept. 7. None from six ounces.
16. None from six ounces.

DR. THOMSON'S LETTER.

MARBLE-HILL, *Jan.* 20, 1827.

MY DEAR SIR,

I BEG to inform you that the larva of a musca, of which you sent me several, May 12th, 1824, appeared to be similar to those latterly discharged by your patient in such numbers last autumn. One of them passed into a pupa coarctata the same day, two more changed the day following, a fourth by the 13th instant, and a fifth by the 25th of the same month. They remained in this condition until the 4th of June, when four of them burst their cases, and appeared in the perfect state. As to the species, I am unable to pronounce positively, but it seems to me to be a species intermediate between musca domestica and carnaria, being somewhat larger than the former, but more resembling the latter in other respects. Its smaller size however, and the larva being smooth, and not bristly, show it to be a distinct species; and it will probably prove to be musca larvarum of Linnæus, a species which deposits its ova in the bodies of the living larva of lepidopterous insects, of which I had an example in point last summer, in the larva of

phalæna caja, or the great tiger moth, which, in place of passing into a pupa after spinning itself up, gave exit to several smaller larvæ, which immediately passed into pupa coarctata, and shortly after into flies, which I really think to be identical with those derived from the patient.

The above species is also said to deposit its ova in the roots and lower part of the stem of cabbages, which may possibly throw some light upon the source of those derived from your patient.

I consider it very fortunate that you submitted to my inspection the bottle of flies you hatched from larvæ obtained from your patient, as I find them to differ from those hatched by myself. Yours, on close inspection, I find to be the musca vomitoria, or blue-fly, a species well known to be the most troublesome and persevering in attacking viands of all kinds with a view to deposit its ova.

The ascarides you submitted to me from time to time, were principally similar to that formerly figured and most resembling ascaris felis; the rest were ascaris lumbricoides.

My dear Sir,

Very truly yours,

J. V. THOMSON.

To Dr. Pickells, Cork.

MR. CLEAR'S OBSERVATIONS.



AT different times in the years 1822 and 1823, I received from Doctor Pickells a number of larvæ, with a request that I would endeavour to ascertain to what species of insect they belonged. He informed me that they had been obtained from a female patient under his care, who continued to discharge them from her stomach in considerable quantities on administering to her certain medicines. On a first examination they appeared to be the larvæ, at different stages of growth, of a coleopterous insect, the *tenebrio molitor* of Linnæus, known under the name of the meal-worm, and frequently found both in the grub and the beetle state in bake-houses, and in stores where meal and flour are deposited. Under this impression I placed them in a box containing oatmeal, expecting they would feed, and undergo their usual changes in it. I observed, however, on inspecting them occasionally, that several of the larvæ appeared restless, and continued to move unceasingly over the surface of the meal, making frequent attempts to get out of the box, as if dissatisfied with their situation, whilst others remained beneath

at rest and feeding. I was induced from this circumstance to examine them more closely, and on doing so I thought I perceived some slight differences between the larvæ, which led me to conclude that they might belong to different species. It then occurred to me to remove those which remained on the surface of the meal into some moistened earth which I placed in a flower-pot, and I found that the larvæ seemed pleased with the change, for they immediately buried themselves in the clay, and continued to remain quietly beneath.

During the course of about eighteen months several of the larvæ, both in the meal and the clay, died; those that survived, however, had gradually increased in size, having cast their skins several times, and appeared healthy and active. In about twenty-one months from the time I received them, I found that some of the larvæ in the meal had changed into their last, or beetle state, and proved to be, as I had supposed, the *tenebrio molitor*. In five or six months after one of the larvæ in the clay likewise became a beetle, but of a species considerably larger, and of very different appearance from the former, being the *blaps mortisaga* of Fabricius, a beetle not uncommon in dark damp cellars, and other similar situations.

How the larvæ of such insects could continue to exist in the human stomach, a situation apparently so little suited to their natural habits, I confess myself

totally unable to explain ; and I have given the foregoing statement at the request of Dr. Pickells, merely to prove that the larvæ which he handed me produced the two species of insects which I have mentioned.

That the same insects, in their different states, exist in very different situations, and that what they enjoy in one stage of their existence, would be fatal to them in another, is a fact well known to those who have paid any attention to their habits. That insects live in the stomach and intestines of animals in their first state, which are never found there, and indeed could not endure such a situation in their perfect state, is also a fact well known to the entomologist ; but that the same larvæ can exist equally well in the heat of the human stomach, and buried beneath moist clay, is a circumstance to which there is no analogous case, as far as I am acquainted, even in the various and often wonderful economy of insects.

A CASE
ILLUSTRATIVE OF THE EFFECTS OF A DIVISION
OF THE
SPINAL MARROW,
BETWEEN THE THIRD AND FOURTH DORSAL VERTEBRÆ,
IN THE HUMAN SUBJECT,
WITH REMARKS.

BY WILLIAM WALLACE, M. R. I. A.,

SURGEON TO THE CHARITABLE INFIRMARY OF DUBLIN, AND TO THE INFIRMARY FOR THE TREATMENT OF DISEASES OF THE SKIN, LECTURER ON CLINICAL SURGERY, &c. &c.

Read July 2, 1827.

ABOUT three o'clock, P. M., of the 11th of last December, a messenger came to my house, in great haste, from the late Alderman Bloxham, with the request that I would, without loss of time, visit one of his servants, a man 44 years of age, who had fallen from the drawing-room window into the area, and was severely injured.

I found the servant in the kitchen, supported on

a chair by several members of the family, and crying out most lamentably that he could not bear the excessive pain of his back. His countenance was very pale and anxious; his surface cold; his eyelids closed; his pupils much dilated; pulse small and weak, but, as to frequency, natural. Not more than fifteen minutes had elapsed between the time of the fall and the period at which I saw him. The servants said that they had just pulled him in from the area, where he had been lying in a state of insensibility.

I desired that he might be brought to a bed, which was in a small room adjoining the kitchen, that I might be able to have him carefully examined. On removing him from one place to the other, although he continued to exclaim respecting his back, he did not appear to have any power over himself, or to be conscious of what was doing.

On passing my finger along the spine, and, at the same time, making pressure with its end, I felt a very obscure crepitus, as if the spinous processes of those dorsal vertebræ which lie between the scapulæ were broken; and when the pressure was increased at this part, it appeared to cause intolerable distress. There was not, however, here, nor in any situation along the spine, any mark of violence on the surface. I asked him several times in what part of his back he felt that pain of which he com-

plained so much, but I could not obtain from him any answer, nor did he appear as if he knew I was asking him any questions, but continued to cry out that he could not bear the distress which he suffered; and frequently, in a state of frenzy, exclaimed that he would cut his throat.

I proposed to the family that he should be immediately removed to an hospital; and having obtained their consent, he was conveyed as cautiously as possible to the Charitable Infirmary, Jervis-street, whither I accompanied him; and having seen him put in bed, I gave directions that he should be permitted to lie undisturbed (for he had now become nearly tranquil, except when moved) until about eight o'clock in the evening, at which time I would again see him.

At eight o'clock I found him in a state of comparatively great tranquillity. His countenance was pale, but composed; his pupils were less dilated; surface cold; pulse 80, small, contracted, and weak; respiration slow, and scarcely perceptible; abdomen full and tense, but without any apparent uneasiness upon pressure. He had not discharged either urine or fæces since the accident. He appeared stupid, and inattentive to every thing about him. However, when roused, he answered calmly and collectedly every question he was asked, but he was so much disposed, and so anxious, to compose

himself to sleep, that it was difficult to procure his attention for a minute at a time. He complained very much of the pain of his back, which he referred to the spine, between the scapulæ. He said he was remarkably chilly, and very thirsty, that he had no sensibility or power of moving his lower limbs, or, to use his own words, that he was dead from the chest downwards. He said he was not conscious of any thing which had occurred to him from the time he was cleaning the window, until about an hour before this visit, viz. four hours after the accident; that he had no recollection of having been carried from the area into the kitchen, nor from the latter into the bed-room, nor from his master's to the Infirmary, nor of having seen me that day before; that he could not give any account of the manner in which he fell, that he did not recollect beyond the time when standing on the window-stool outside, and with one hand grasping the sash, he was cleaning the window with the other.

With a catheter (the introduction of which he did not feel) I drew off about six ounces of urine, and directed that the apothecary of the hospital should watch the secession of the chilliness of which he complained, and the return of the surface to its natural temperature, and that he should then take from his arm sixteen ounces of blood, and administer a purgative enema.

12th December, second day after the accident. From the apothecary and nurse I received the following report, viz. that the chilliness had subsided at eleven o'clock last night, (eight hours after the accident,) that he then became very restless, hot, and remarkably thirsty, his stomach discharging the drink as fast as taken; that the purgative enema had been administered, but instantly came away without causing any fæculent discharge, and without exciting in the patient any sensation whatever; that twelve ounces of blood had been taken from him, which was all that could be procured, although a vein in each arm had been opened, so small were the superficial vessels; that after this he had spent a very restless night, had drank a great deal, but threw it off as soon as swallowed.

He appeared in great agony; his countenance had a most anxious aspect; his eyes were remarkably dull, resembling those of a person exhausted by want of sleep; pupils contracted; pulse above 100, bounding, and rather full; respiration quick and oppressed; temperature of the lower, as well as of the upper portion of the body, felt to my hand to be a little above the natural standard; tongue white and dry; thirst very great; continued irritability of stomach; abdomen full and tense. No discharge either of urine or fæces since the accident: the urine drawn off by the catheter excepted. No sensibility or mobility from the seventh vertebro-

sternal rib downwards. The line which separates the sensible superior parts from the insensible and inferior is very accurately defined. Below a certain line all is insensible and immoveable, and above the same line there is not only perfect mobility and sensibility, but the slightest touch, particularly if made over the surface of a rib, causes great pain, and any degree of pressure below the same line is not felt. He complains very much of severe pain of his back, in the situation already mentioned, which is greatly increased by any attempt to move, and by the slightest pressure. He also complains of what he calls a sickness of his head. It may be mentioned that there is a small wound about an inch in length over the left side of the occiput : the bone is not denuded or injured.

I drew off about one pint and a half of urine, which had a deep colour, and a very strong urinous odour. Eight ounces of blood, which was all that could be procured, were taken from his arm. The repetition of the purgative enema was directed, and a pill of scammony and calomel ordered.

The enema came away as soon as administered, without producing any effect ; and the scammony and calomel were almost as quickly thrown from the stomach.

The entire of the day and night was spent in

anxious but fruitless attempts to tranquillize his stomach, and to procure discharges from his abdomen, which had become extremely full and tense, attended by a great and distressing sense of oppression. Common purgative and terebinthinate enemata were regularly and steadily persevered in, and every form of purgative medicine, likely to rest on the stomach, was administered ; but in vain, for the moment any thing was swallowed, it was again thrown up.

The urine was taken off at three different times in the course of the day : about three ounces at each operation. It was of the same quality as that mentioned above. The pulse was observed to become much weaker and more frequent as the day advanced, and the tongue whiter and dryer. The eyes remained remarkable for their dull, muddy, appearance ; and the pupils were much contracted.

13th December, third day after the accident ; nine o'clock in the morning. He dozed a little in the course of the night, but without being refreshed. His stomach persisted in the same irritable state, and discharged whatever he took as soon as swallowed. There had been no evacuation either of urine or *fæces*. His countenance retains its appearance of great anxiety and distress ; his eyes have the same peculiar sleepy aspect already remarked ; his pulse is smaller, weaker, more frequent, and

more tremulous. He complains much of the distress occasioned by the very frequent efforts to vomit, of a violent palpitation of his heart, and of a constant desire, but complete inability, to cough. When permitted to remain quiet his back does not give him much pain, but, upon the slightest motion of any kind, he appears to experience the greatest agony.

Having now asked him very particularly respecting the sensations which accompanied the action of vomiting, he said he was not at all sick, nor were his feelings such as he had experienced on other occasions during the effort of vomiting. He appeared to have some power of suspending that action of the stomach which caused the discharge of its contents ; and when he directed his attention particularly to it, he was able to retain his drink for a short time.

With the catheter I drew off about ten ounces of urine, of the same quality as that already mentioned ; and I observed, as well as the pupils of the hospital, that it felt remarkably warm.

This day, as yesterday, was spent in fruitless attempts to procure evacuations from his bowels by medicine exhibited by the mouth, and by enemas. I also had recourse to frictions on the abdomen, with a mixture of jalap, rhubarb, and gamboge, in

mucilage of gum arabic, as recommended by Alibert;* but all in vain.

About ten o'clock in the evening I visited him, and he then appeared not likely to live until morning. The vomiting had continued, and a hiccup had supervened. The abdomen was even more full and tympanitic than in the morning; and the only discharges procured during the entire day were six ounces of urine, which had been drawn off at two periods. He now complained, with great earnestness, of the violent palpitation of his heart, which beat with great frequency, and with such force as to be observable through the sheet. The action of the heart communicated to my hand a peculiar tremulous sensation. His breathing was much oppressed, and very frequent. There was a constant desire, with inability, to cough, and extreme pain on every attempt.

At this moment, feeling exceedingly distressed at his most miserable and pitiable situation, and most sincerely regretting my incapability of affording him any relief, it occurred to me that if I mingled in his drink a medicine which would be likely to act on the bowels, although it had been only a moment in contact with the stomach, a discharge might thus perhaps be procured. The medicine which I chose

* See *Mémoires de la Société Médicale d'Emulation*.

was the tartrate of antimony ; and having procured a large jug of whey, I made a solution of this salt in the proportion of a grain to the pint, and I directed that he should take this for his drink, and as often as he chose, for he had hitherto been restrained in quantity. It may appear extraordinary that I should have selected that medicine, but I was induced to do so, because I thought it was more likely than any other to answer the end in view, and because I did not see any objection to it, from its natural emetic influence, for I did not consider that the morbid action of his stomach resembled ordinary vomiting, nor was the discharge from this organ accompanied by sickness.

14th December, fourth day after the accident ; ten o'clock in the morning. Having left him yesterday evening apparently in a dying state, my astonishment was very considerable on finding him not merely alive but very much relieved. His countenance had lost its pallid, anxious, distressed, and sunken appearance. There was now rather a flush in his face, and much greater vivacity of his eyes. The vomiting and hiccup had ceased, and his abdomen felt soft, and was much less full. The thirst continued with unabated violence, and the tongue was remarkably white, though not dry. His pulse was slower, fuller, and softer. He did not complain so much of his back, and was able to toss his arms about without producing any apparent dis-

tress, although on the preceding day he had not been able to move them to the most trifling extent without producing great pain.

On inquiring from the nurse the history of these unexpected changes, she informed me, that about twelve o'clock in the night the vomiting and hiccup had subsided, that he then began to doze, and slept much ; and that about five o'clock this morning his bowels began to act, since which period he had several very copious and very fetid involuntary discharges ; and that he had drunk in the course of the night four pints of whey, in which four grains of emetic tartar had been dissolved. The patient himself asserted that the whey had not produced any feeling of sickness, and he attributes to its influence the cessation of the vomiting and hiccup, as well as the discharges from his bowels.

I drew off about eight ounces of urine, and directed that he should be kept as quiet as possible in order to encourage sleep, to which he appeared much disposed.

This day was spent without taking any medicine. He dozed a great deal, drank much whey, was disturbed by his stomach only occasionally, and had several involuntary and very fetid discharges from his bowels. Twelve ounces of urine had been drawn off at twelve o'clock.

At ten in the evening I drew off about six ounces of urine, and directed that, in case of a cessation for some hours of the evacuation from his bowels, the tartar emetic whey should be continued in the course of the night for his common drink.

15th December, fifth day after the accident; ten o'clock in the morning. He appeared this morning to continue better; he had slumbered much during the night, and had several fetid discharges from his bowels. He drank four pints of whey, with four grains of tartar emetic dissolved in it. Abdomen soft, and much smaller; tongue brown along the middle, white at the sides, and very dry. His stomach had not been troublesome during the night. Pulse more frequent and soft, and conveys to the finger a peculiar tremulous sensation. He complains much of what he calls a soreness of his chest, of a desire to cough, and of an inability to do so. The palpitation of his heart is again very troublesome, and by its action a very peculiar sensation is communicated to the hand when laid on the thorax. I drew off about one pint of urine.

This day was spent, on the whole, with great tranquillity. He was but little troubled by his stomach. He had several involuntary discharges from his bowels. His thirst was much reduced, and he had occasion to take but little in the course

of the day, except effervescing draughts, to satisfy his desire for liquids.

At eight o'clock in the evening a great amendment appeared to have taken place. He had little thirst; tongue moist and cleaning; pulse stronger, and not so frequent; abdomen very soft and flaccid. He did not now complain of any distress unless what arose from a desire to cough, and an inability to do so with effect. The palpitation of his heart did not attract his attention, nor was the same tremulous sensation communicated by its pulsation to the hand when laid on the thorax. His respiration appeared to me to be natural; countenance tranquil, and without a flush. He has been in a profuse perspiration for the last two hours. I drew off about sixteen ounces of urine.

16th December, sixth day after the accident; ten o'clock in the morning. There is a remarkable alteration in his countenance. His eyes have again a dead, sleepy appearance; his face is livid; pulse very frequent, weak, small, and tremulous; respiration rapid and short, with a heaving of the chest. He complains very much of shortness of breath, of inability to cough, and of palpitation of his heart. On applying my hand to the region of this organ, I was astonished at the violence of its action, and at the peculiar tremulous sensation which its pulses produced.

The catheter was introduced thrice this day, and the urine drawn off at each time possessed a strong ammoniacal odour.

17th December, seventh day after the accident ; Symptoms as yesterday, but debility increasing. Sordes on the teeth and lips, with coagulated mucus in his eyes, give him the aspect of a person in the last stage of typhoid fever.

18th. Eighth day after the accident. General symptoms as yesterday. Much low muttering delirium during the night. He is not collected at present. On being asked how he was, he replied he was very well, and inquired as to when he might get up. His pulse has considerable strength. Bowels acted on in the course of the night. Towards the close of the day the fæces and urine were passed involuntarily, his respiration became sonorous, and very frequent, and the pulse sunk. In the evening he ceased to speak. Although he heard questions, he did not appear to possess sufficient power of articulation to enable him to answer them. The same temperature and moisture of the skin continue.

19th. Ninth day after the accident. He died about three o'clock this morning. From the report of the nurse it appears he had not spoken from the time I paid the last visit until his death, which was preceded by a shrugging motion of his shoulders,

two or three times repeated. She also remarks that there had been no appearance of convulsions, with the exception of that motion of his shoulders; but observed that, two days before, she had remarked a peculiar spàsmodic contraction of the right side of his cheek, when he attempted to take a drink.

DISSECTION,

Nine hours after Death.

External appearance.—Great and universal rigidity of the muscular system, as remarkable in the lower as in the upper limbs. Œdema of the legs and thighs. The posterior aspect of the head, trunk, and extremities, extremely livid, nearly black, with livid patches scattered about the face, front of the neck, and about the thorax. The penis and scrotum are very livid, and the latter excoriated, or entirely stripped of its cuticle, from the action of the urine.

Spine.—To expose the spinal marrow an incision was made through the integuments, in the direction of the spinous processes, from the occiput to the point of the sacrum. The muscles covering the vertebræ were then dissected off, and with a small saw the spinous were separated from the transverse processes. In this way the spinous processes and their corresponding laminæ were removed, and the vertebral canal and its contents exposed.

The muscles covering that part of the spine which lies between the scapulæ were black from effused blood. There was no perceptible rupture of their fibres. The spinous processes of the second, third, and fourth dorsal vertebræ were fractured at their root. The ligamenta subflava and interspinalia belonging to the fifth and sixth vertebræ were torn. A large quantity of dark blood was effused into the spinal canal, round the theca vertebralis, insulating the latter from the former, and extending from the upper to the lower end of the spine. The theca vertebralis was lacerated on its dorsal aspect to the extent of three-eighths of an inch, opposite to the third vertebra of the back.

The spinal marrow, with its proper membranes, was torn across at that part where it corresponds to the interval between the third and fourth dorsal vertebra. Its lacerated ends were separated to the extent of half an inch, and the interval filled with blood.

The vaginal ligament was lacerated at the interval between the third and fourth dorsal vertebræ, and blood was effused between the posterior surfaces of the bodies of the vertebræ and this ligament. The intervertebral substance, which corresponded to the rupture in the vaginal ligament, was torn from the vertebra above. The spine, viewed from

the thorax, did not present any marks of injury.

Head.—There was extreme vascularity of the scalp : the blood contained in the vessels being of a very dark colour. On tearing the vault of the cranium from the corresponding surface of the dura mater, a very large quantity of dark coloured blood was effused. The veins of the surface of the brain were very much distended ; and a thin stratum of effused blood covered the posterior, the superior, and the external surfaces of the posterior lobes of the brain, and part of the surface, by which they correspond to the longitudinal fissure. This effusion was between the pia mater and the surface of the brain, and the stratum was so very thin that it resembled, in its appearance, such an impression as would be made by the stroke of a camel's hair pencil charged with blood. The substance of the brain was firm, and the observable vessels of the medullary portion remarkably numerous and large. There was a small quantity of a serous fluid in the ventricles, and in the general cavity of the arachnoid membrane.

Abdomen.—The viscera still retained their vital warmth to a great degree. The stomach and large intestines were much distended by flatus. The former contained nearly a pint of a thin greenish fluid.

In the small intestines there was a quantity of yellow, viscid, fetid matter. The large intestines were empty of solid and fluid contents. The lining membrane of the stomach was preternaturally vascular, and of a pink colour. The small intestines, and particularly the ilion, were of a very dark livid colour, nearly black. This colour was apparently owing to the vessels being gorged with venous blood. There was an extensive intussusception of the small intestines.

The liver was very firm, its colour pale, yet, when cut into, it discharged an unusual quantity of black blood. The gall-bladder was very much contracted, and contained about two drachms of a viscid, colourless, and insipid fluid, resembling in its appearance the white of an egg. The lining membrane of the gall-bladder was very vascular, and of a deep pink colour. The spleen was natural. The kidneys were very firm, unusually large, and when divided with the knife, poured out a large quantity of dark-coloured blood. The bladder was contracted, and contained about one ounce of turbid urine, mixed with mucous flocculi; and its lining membrane was covered by a very thick stratum of mucus.

The whole system of the vena porta was greatly distended with very dark-coloured blood; and there

was a small quantity of serous fluid in the cavity of the peritoneum.

Thorax.—The muscles which cover the outer surface of the thorax were stained in many spots with effused blood, but their fibres were not ruptured: these spots did not correspond to the livid spots observed on the external surface of the body. All the other muscular fibres, here as well as elsewhere, with the exceptions already made, were of a brilliant red colour. The veins on the outer and inner surface of the pleura were so fully and so minutely injected with dark-coloured blood, that they formed a beautiful vascular net-work, and rendered the membrane nearly black. The surfaces of the pleura were gently glued together by a stratum of adhesive matter. This stratum was so very thin that it could not be observed when the surfaces were separated, and this was done with the slightest force. The lungs were firm, and filled the cavity which contained them; they were of a dark colour, and gorged with black blood. The cavities of the pleura contained several ounces of a dark-red serous fluid. There were about three ounces of a yellow serous fluid in the cavity of the pericardium. The heart was very large, and distended by dark blood, partly coagulated, particularly on the right side. The heart having been first separated from the lungs, and the lungs afterwards taken from the thorax, the quantity of black blood effused by the

division of the large vessels was so great, that more than a pound and a half lay in the thorax when the viscera were removed.

REMARKS.

The division of the spinal marrow does not prevent or diminish the development of that state of rigidity of the muscular system which is, perhaps, the result of its last vital action. This observation has been made by Nysten on other animals. “Ni la paralysie, ni la destruction de la moelle épinière, n’empêchent la roideur de se développer et d’acquérir toute la force dont elle est susceptible.”* It may be remarked that this appears to be one, among other proofs, of the independence of the property of contractility of the muscular fibre on the nervous system.

In this case the rigidity of the muscles must have commenced long before the animal heat had been annihilated. This is a fact in direct opposition to a conclusion of the author just mentioned. “Dans les mammifères et les oiseaux, le moment où la roideur commence est celui où la chaleur vitale paroît s’eteindre, &c.”† Here, however, although the

* Recherches de Physiologie et de Chimie Pathologiques, par P. H. Nysten. *Paris*, 1811.

† Nysten, loc. cit.

rigidity had arrived at its utmost extent, the vital temperature was considerable, and this was the case, although the season was very cold, and the body had been exposed to a cold atmosphere from the time of death to the period of examination. Nysten was probably led into this error from a desire to establish his proposition, that muscular rigidity was the surest sign of death ; for if there was any other sign of life remaining, when this rigidity came on, it would overturn his hypothesis.

From the accumulation of blood in the venous system and right side of the heart ; from the colour of the blood which was circulated in the capillaries before death, and contained in all the vessels when examined after death ; from the general infiltration of the cellular membrane, and the serous fluid accumulated in the serous membranes ; and finally, from the state of the respiration and circulation during life, we are authorized to conclude that the blood did not undergo its proper changes in the lungs, and that there was thereby produced an accumulation of this fluid in the right side of the heart, and in the venous and capillary systems. In consequence of the latter, there had resulted serous effusions.

From the nature of the fluid contained in the gall-bladder, it may be concluded that the biliary secretion was suspended. The ammoniacal odour

of the urine, accompanied by an increased discharge of mucus, illustrate the state of the urinary function.

The temperature of the paralyzed parts did not suffer any diminution. Therefore, if the brain be the source of animal heat, as was first attempted to be proved by Mr. Brodie, and if the spinal marrow be the organ of its transmission, we must conclude, with my friend Dr. Chossat of Geneva, that it performs this function through the medium of the tri-splanchnic nerve, and not through that of its own peculiar nerves. For if the latter were the case, the temperature of those parts supplied by nerves, which arose below the division of the spinal marrow, would have been diminished.

It appears that the contraction of the muscular system, and the coagulation of the blood, which occur at death, are not directly proportioned to each other.

As the muscular system possessed a brilliant red colour, while the capillary system was universally filled with dark-coloured blood, we have a proof that the colour of the muscles is not directly owing to the blood which circulates in the natural state in their capillaries.

Was the discharge from the bowels on the fourth

day the result of the action of the tartar emetic, or was it the consequence of the injury of the spinal marrow? When a bladder has been paralyzed from injury of its nerves, retention of urine is the immediate result, but sooner or later this is followed by incontinence, as was the case in the present instance. This phenomenon is to be explained by a law to which the action of nerves appears to be subject, viz. one degree of pressure or irritation will produce spasm or convulsion, and a greater degree of the same will cause loss of power, or paralysis. This law will be found to govern the muscular system of both voluntary and involuntary action, and consequently the sphincters.

Was the inflammation of the thoracic viscera, and the violent action of the heart, the consequence of the injury of the spinal marrow? or did they result from the direct injury of these viscera? I have frequently observed thoracic inflammation and great pectoral distress to accompany injuries of the spinal marrow, and this on many occasions I was induced, from a consideration of the manner in which the injury was inflicted, to attribute to the action of the spinal marrow on the viscera of the thorax, and not to the direct influence of the injury. In that diseased state of the spinal marrow, which accompanies the curvature of the spine from caries of the vertebræ, the pectoral organs experience

much distress. The relations of the intercostal nerve with the spinal marrow would perhaps satisfactorily explain the phenomena in both cases.

GARDINER'S-PLACE,

January, 1820.

SKETCH
OF A
MEDICAL REPORT
ON THE
EPIDEMIC DYSENTERY
WHICH PREVAILED IN DUBLIN IN THE YEAR 1825.

By JOHN O'BRIEN, M. D.,

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Read August 6, 1827.

THE autumn of the year 1825 was distinguished by the extensive prevalence of an Epidemic Dysentery which pervaded the country generally, but made its severest assault on the city and vicinity of Dublin. Unwilling to allow a medical event of so much importance to pass away unnoticed, the author is induced to offer the following abridged account of this Epidemic in the hope that its phenomena may tend to elucidate the etiology of Dysentery, a subject the most obscure, and yet the most important perhaps in the whole range of medical science, and also contribute to improve its pathology.

The summer and autumn of the year 1825 were marked by extreme heat and drought, which formed the prominent character of those seasons. The medium height of the thermometer was considerably greater than it had been for several years antecedently, and the effects of drought were sufficiently visible in interrupted vegetation, and the scanty and impoverished harvest which succeeded. Esculent vegetables of all kinds were much impaired in quality and quantity.

This Epidemic, contrary to the usual order of invasion in former instances, commenced among the better classes of society, as if those classes possessed more sensibility to the exciting causes, or were placed more directly under the influence of their operation. From the commencement of the hot weather in the month of June, cases of Dysentery were becoming more and more numerous among the better classes ; but it was not until the middle of August that our registry at Cork-street hospital afforded, by a considerable increase in the applicants for admission, a proof that the Epidemic had involved the population at large in its attack. Up to the 15th of August no material increase was observable in the admissions to that hospital, but after that period a rapid augmentation took place, which continued to the beginning of November, when they reached their maximum. On the 15th of August the total amount of patients was 145 ; on the 12th of November it rose to 210, an

increase which is entirely to be attributed to the prevailing Dysentery, for no material augmentation of idiopathic fever existed in this interval in Dublin.

The author, having commenced his attendance as one of the intern physicians of the hospital on the 1st of October, 1825, had an opportunity of treating some of the worst cases of the disease, which had either remained since the preceding month, or had been admitted in the months of October and November, when the Epidemic had reached its acmé.

The following Table exhibits the names of the patients labouring under Dysentery placed under the author's care in the two months above mentioned, with the date of admission, discharge, and death, viz.

LIST of Patients labouring under Dysentery on First Floors, New Building and East Wing, House of Recovery, Cork-street, in the months of October and November, 1825.

	No.	Admitted.	Discharged.	Died.
John Smith	1	Sept. 21	Nov. 14	
Michael Coyne	2	Sept. 15		Dec. 5
Michael Thorpe	3	Sept. 20	Oct. 26	
Charles Clarke	4	Sept. 24		Oct. 3
Henry Kennedy	5	Sept. 28		Oct. 4
John Kelly	6	Sept. 30	Dec. 16	
John Higgins	7	Oct. 10	Nov. 17	
James Phillips	8	Oct. 11	Oct. 14	
Patrick Finigan	9	Oct. 12	Nov. 10	
William Delany	10	Nov. 1	Nov. 19	
Hugh M'Fadden	11	Nov. 5	Jan 24, 1826	
Thomas Doyle	12	Nov. 11	Oct. 2	
John Rorke	13	Oct. 28	Nov. 8	
Owen Toole	14	Oct. 19	Nov. 13	
John Dowling	15	Oct. 18	Dec. 5	
John Hill	16	Nov. 2	Nov. 17	
Thomas Doyle	17	Nov. 11	Dec. 2	
Patrick Flood	18	Nov. 4	Dec. 10	
Thomas Wren	19	Nov. 29	Dec. 24	
FEMALES.				
Catherine Kenny	20	Sept. 25	Nov. 17	
Catherine Murphy	21	Oct. 5	Oct. 11	
Esther Byrne	22	Oct. 7		Oct. 12
Anne Gahagan	23	Oct. 25		Dec. 11
Sally Quin	24	Oct. 27	Nov. 9	
Judith Dowling	25	Oct. 27	Nov. 20	
Fanny Finn	26	Oct. 30		Nov. 6
Betty Rossiter	27	Nov. 9		Dec. 18
Catherine Kenny	28	Nov. 22	Dec. 2	
Catherine Maher	29	Nov. 26	Jan. 4, 1826	
Betty Murray	30	Oct. 25	Nov. 10	
Mary Fallon	31	Nov. 1		Dec. 8
Catherine Whelan	32	Oct. 1	Oct. 9	
Catherine Ryan	33	Oct. 7	Oct. 12	
Catherine Kelly	34	Oct. 15		Oct. 18
Ellen Brien	35	Sept. 25	Oct. 25	
TOTAL	35		26	9

This mortality, which is little more than a fourth of the whole number, may be considered as a fair average of the ordinary mortality from Dysentery in our hospitals; a mortality considerably greater than that of our idiopathic fevers, the average mortality from which, taken for a number of years in Cork-street hospital, has not exceeded one in fourteen. The mortality from Dysentery, therefore, is vastly greater than that from fever, in relation to the aggregate of persons affected with those diseases, but actually or positively it is much less, for the sufferers from Dysentery, whether we make the comparison in ordinary times, or in the epidemics of both diseases, are not a twentieth part of those from fever. The less diffusion of Dysentery is probably owing to the absence of contagion in this disease, which is the most active propagating principle of idiopathic fever. The mortality from Dysentery, however, is considerably greater among the lower classes of society than the higher, which is nearly the reverse of what we observe in relation to fever.

As the ward under the author's care formed a third of the entire hospital, it is probable that the total number of dysenteric patients in the hospital, within the two months formerly specified, may have amounted to a little more than one hundred. This however will afford but an imperfect idea of the extent of this epidemic, for it must be recollected that the hospital just mentioned is intended exclu-

sively for contagious fever, and has no separate wards for Dysentery, and patients labouring under the latter disease are sometimes reluctant to enter a fever ward. None, therefore, but the more intense forms of the disease, the worst description of cases, apply for admission to this hospital, and of this number the Table above mentioned is almost exclusively composed.

The duration of the disease, when it terminated favourably, varied from two to six weeks; and of the fatal cases four died in the acute stage, that is, within the first three weeks of the disease, and five lingered on to the chronic state, under which they ultimately sunk. The ages of the majority in the above list varied from twenty to forty, none were under the age of twenty, and two only (fatal cases) exceeded the age of forty. It was not a little remarkable that persons of middle age, and in the vigour of life, seemed to have been the principal sufferers in the present epidemic, and that the young and aged escaped in a greater proportion than usual. In the males, it may be observed, the mortality was less than in the females, which the author believes to be the ordinary occurrence in this disease.

In a majority of the cases the disease, through its entire course, was attended with febrile excitement; but in some instances a disease which in the outset

appeared to be simple idiopathic fever, was after two or three days converted into Dysentery, with an evident remission of the febrile symptoms. In other cases Dysentery appeared as a sequel of fevers of a bad type, in the stage of convalescence, an occurrence far more frequent during the prevalence of Epidemic Dysentery than at other times, and indeed presenting one of the most dangerous and intractable forms of this disease. One patient, (Michael Kelly,) who had passed through a dangerous typhus, from which he escaped with difficulty, on the day after his discharge from the hospital was attacked by Dysentery, from which he recovered after a long and doubtful struggle. This patient's brother was dismissed from the hospital under circumstances precisely similar, nearly about the same time, and suffered a similar attack of Dysentery, for which he was subsequently admitted to Sir P. Dun's hospital. One of the hospital porters, named T. Wren, was admitted labouring under fever of a mixed catarrhal and rheumatic type, which was treated by venesection and a liberal evacuant discipline. On the fourth day after his admission his fever disappeared, and at the moment when he was congratulating himself on the shortness of his illness, he was seized with Dysentery.

This man lay in the next bed to a patient labouring under Dysentery, and used the same night-chair, and he remained strongly impressed with the

belief that he caught his disorder by infection from his neighbour, an opinion which the circumstances of his case rendered not unreasonable.

One other instance occurred in which a tolerably strong presumption at least existed of the propagation of the disease by contagion, viz. the case of Kelly before mentioned, the whole of whose family, amounting to six in number, were attacked in succession. But the author has met with no other strong or probable instance of the communication of the disease by contagion, although minute inquiry was made on this subject of all the patients cited in the Table.

The discharges were almost, without exception, of a ferruginous, or dark brown colour, and generally exhibited insulated circular patches of blood floating on the surface, poured out, no doubt, by the vessels of the abraded rectum, after the passage of the fæces. In a case which occurred in private practice, the colour of the discharges was invariably altered from a dark brown to a dirty whitish hue by opium ; and again on withdrawing the medicine resumed its original shade.

The general seat of pain was the prominent part of the hypogastric region, a little below the umbilicus ; and this pain was more frequently fixed than intermitting, which latter character the tormina

of Dysentery generally assume. In the case of Coyne, (2,) the most protracted and decidedly chronic which occurred in the entire number, the discharges, from the commencement to the fatal termination, were of a deep black colour like tar. The number of discharges in individual cases varied from twenty to forty in twenty-four hours, and in no instance but one, as far as could be ascertained, exceeded the latter number. In the excepted instance, the most violent and rapid in its progress which occurred to the author in the present Epidemic, (Cath. Kelly, 34,) and in which cholera was complicated with Dysentery, there existed an almost incessant discharge, both upwards and downwards, of a dark-coloured fluid resembling coffee-grounds, which no medicine could restrain. In mild cases, however, the number of the discharges seldom exceeded twenty in twenty-four hours.

The colour of the skin was in every instance altered to a darker hue, assuming, as the complexion varied, either a leaden or copper tinge, and in general it affected the touch with the sensation of roughness, and even corrugation. In all severe cases the eye was anxious, the brows wrinkled, the countenance dejected, the cheeks and temples sunk, pale, and cold, the features sharp and pointed.

The disease in some instances made its first invasion suddenly, perhaps after a full meal, long exposure to the sun's rays, intoxication, long vigilance,

or, in fine, after the abuse of any of the non-naturals. Such invasions were generally attended with symptoms of cholera of various degrees of intensity. In other cases, which formed probably a majority of the whole, the patient was warned of the impending disease by the premonitory notices of loss of appetite, indigestion, furred tongue, costiveness, attended with occasional twitches of pain in the abdomen, which gradually increased in frequency and severity, until the disease was fully developed. Such cases usually commenced with diarrhœa.

The following was the general plan of treatment adopted, and which appeared on the whole to prove most successful. The patient, if young, and in the first stage of the disease, was immediately blooded to the extent of twelve or fourteen ounces; he was then placed in a warm bath at a pretty high temperature, in which he was retained for fifteen or twenty minutes, if possible, for the harassing necessities of the disease seldom permitted so long an interval of quiescence. He was then, after a vigorous friction of the whole body, but particularly of the abdomen, with camphorated oil, put into bed, having been previously swathed with a flannel roller, drawn tightly round the abdomen and loins, in order to support the bowels, a measure which is always attended with comfort and alleviation of pain to persons labouring under this disease. After this a small bolus, or pills containing ten grains of calo-

mel, one, or sometimes two grains of opium, and occasionally combined with antimonial powder, were administered, and repeated after an interval of eight hours, if the urgency of pain rendered such repetition necessary, for the anodyne effects of opium scarcely extend beyond this period. As patients are generally conveyed to the hospital at a late hour in the day, the measures just described occupied the first evening and night after admission. On the morrow a purgative draught, consisting sometimes of castor oil, tincture of rhubarb, and tincture of opium; sometimes of infusion of senna and salts, with tincture of rhubarb, and tincture of opium was exhibited, and sometimes the neutral salts alone. The author has not found from experience that castor oil possessed more irritating qualities than the other purgatives above mentioned, and thinks that the prejudices which some practitioners entertain against it, are altogether groundless; but all apprehension on this subject may be removed by the addition of tincture of opium, which the author thinks will even promote its purgative virtues in the disease before us. If the symptoms still continued urgent, and the pulse gave indication of the presence of inflammatory and febrile action, the bleeding and warm bath were repeated, and the calomel and opium continued as above, alternated however by purgatives, until the disease yielded, or until ptyalism, or, at least, soreness of the gums was effected. When this latter effect was produced, which in some

instances was accomplished with considerable difficulty, the mercurial part of the medicine was discontinued, and the opium alone exhibited, accompanied as before by the alternate use of purgatives. In many instances the Dover's powder was substituted for opium, and achieved the cure with equal success, and indeed this modification of opium gained confidence in proportion to the frequency of its employment, and cannot be too highly commended in this disease.

Several very severe cases of Dysentery yielded to the mode of treatment just described : such were those of Sims, Finnegan, Delany, Philips, Rorke, Toole, Kenny, Murphy. The difficulty of producing ptyalism, or even affecting the gums by mercury in this disease, has been noticed by other physicians. Of this difficulty a remarkable example occurred in the patient Finnegan, who took a drachm and a half of calomel before that effect was produced, and who used mercurial friction at the same time for several days. This patient rapidly recovered as soon as ptyalism was produced, and was ultimately dismissed perfectly cured. The difficulty of producing the constitutional effects of mercury in this disease, suggests the propriety of employing the medicine in a larger dose than ordinary, and the author, in compliance with this view, has exhibited calomel in doses of from ten to twenty grains in the present Epidemic, and the effects have not disappointed his

expectations. He feels it necessary to add, however, that the disease assumed more of the bilious and hepatic character than formerly, and hence the indications for mercury were more decisive.

In persons who presented themselves at an advanced stage of the disease, or who were past the vigour of life, the blood-letting was omitted, and the treatment with calomel and opium, alternated by purgatives, only adopted. In such cases, as soon as the mouth could be affected by the mercurial medicines, among which mercurial inunction was sometimes added to the calomel and opium, these medicines were omitted, and the patient directed to take the decoction of the Simarouba bark, combined with tincture of opium, the latter carried to such an extent of dose, as was found fully adequate to mitigate pain, and repeated at intervals of six or eight hours, so as to make such relief permanent. The case of Smith (1) was one of the description now mentioned, and successfully treated on this plan. The author found him, on resuming the intern duty of the hospital in the beginning of October, labouring under a most severe and unpromising form of the disease, of three weeks duration; and though his recovery was for a long time doubtful, and indeed considered hopeless by the nurse-tenders, he had the satisfaction, under the above plan of treatment, to dismiss him perfectly cured. No patient in whom salivation could be excited died, save one,

(Rossiter, 27,) and with the concluding particulars of her case the author is unacquainted, the fatal event having taken place more than a fortnight subsequently to his resignation of the intern duty for the extern. The supervention of dropsy on dysentery presents us with the most unpromising complication to which this disease is liable, as it indicates not only an advanced period of the disease, but a total exhaustion, or breaking up, of the constitution.

Two cases of the above description (M'Fadden, 11, and Finn, 26) occurred, the latter of which proved fatal, but the former, the author is happy to say, recovered. The treatment in this case consisted, as formerly described, of the Dover's powder and blue pill, with the persevering use of the supertartrate of potass, in pretty large doses, the antidysenteric virtues of which are celebrated by Dr. Cheyne in his able Report of the Epidemic Dysentery of the years 1818 and 19. Its well known diuretic powers, however, point it out as peculiarly applicable in the complication now under consideration, and in the present case the author conceives he derived considerable advantage from its employment. He thinks it right however to state, that the whole of the case did not fall under his management: on the change of physicians in the beginning of December, the case devolved on his successor, to whom he willingly resigns the merit of its successful termination. The patient was a

young man in the vigour of life, a circumstance, no doubt, which powerfully favoured his recovery. His dropsy was the sequel of a neglected dysentery. The patient Finn, the other case of complicated dysentery and dropsy, was a female far advanced in years, and exhibiting evident marks of disorganized viscera and broken constitution.

The only remaining case which merits particular notice was that of John Coyne, No. 2, which may be considered as an aggravated form of chronic, consequent to a violent attack of acute Dysentery. With this patient, who was about fifty years of age, the mercurial, opiate, purgative, and astringent plans of treatment, were successively tried, and proved unsuccessful. The patient had laboured under the disease for three months previously to his admission. A considerable quantity of mercury was administered to this patient both by the mouth and by inunction, and yet his gums could not be affected even with soreness. The most powerful astringents, combined with opium, were also employed, as, sulphate of zinc and acetate of lead, dissolved in the decoctions of the Simarouba bark, logwood, and the mullein leaf; and finally, the arsenical solution, with tincture of opium. Nothing but temporary relief could be obtained from those medicines, and the patient wasted away, and finally sunk under evident symptoms of atrophy and hectic fever.

The author shall conclude this part of his Sketch by a few general remarks on the medicines employed in the present Epidemic.

The mullein leaf (*verbascum thapsus*) had obtained great popularity in the epidemic of which we are treating, and was regarded among the lower classes as a specific. It is celebrated by one of our old Irish botanists in the following words: "The decoction of the leaves of the mullein, with its flowers, is good against disorders of the lungs, as cough, spitting of blood, &c.; it is also good for gripes and cholic pains. The said leaves, externally applied, are good against œdemas, ulcers, burns, &c. The country people report that it preserveth from witchcraft, and not without reason, for Apuleius saith that Mercury gave it to Ulysses to preserve him from the enchantments of Circe."—See KEOGH'S *Botanologia Hibernica*. A more rational account of this plant will be found in Dr. Woodville's Medical Botany.

The popular form of administering the medicine was that of a strong decoction in milk, viz. three or four ounces of the leaves to a quart of milk; two ounces of the decoction to be taken every two or three hours. The author thought it his duty to submit the medical virtues of this plant to trial both in the hospital and elsewhere, and the result was a

decided conviction that it possesses no specific virtues as an antidysenteric, and that its astringent powers are small, and inferior to many other plants of that class.

The Simarouba bark was formerly much celebrated as an antidysenteric of considerable power, but having fallen into disuse, the author thought it right to introduce it again into the hospital for trial in the present Epidemic. A tolerably extensive experience of its effects induces him to believe that it possesses considerable astringent powers, and that when united with opium, it is an antidysenteric of no mean efficacy.

The arsenic was only employed in one case, that of Coyne, and then only in the very last stage, after all other medicines had been tried in vain. In this instance, therefore, it failed, as indeed was expected; but the author's friend, Dr. Grattan, informs him that he had recourse to this remedy in five or six cases of protracted Dysentery, and that it succeeded when other astringents proved unavailing.

The author regrets that a favourable opportunity did not present itself for trying the strychnus, whose antidysenteric virtues have been celebrated by Dr. Frank, junior, and other German physicians, for, his belief in the Hippocratic apophthegm, *ἡ πείρα σφαλερὴ*, has constantly operated in drawing back his hand,

when he wished to substitute dangerous or doubtful remedies for those of known and approved efficacy.

The favourable report of Dr. Reid of Dublin on the antidysenteric virtues of the hydrochloruret of lime, on whose testimony the author feels the fullest reliance, induces him to think highly of this medicine, and he is sorry he has not yet had an opportunity of submitting it to trial.

At the commencement of this epidemic the author watched its progress with considerable attention, and omitted no exertions to ascertain its exciting causes correctly. The difference in temperature between the autumnal day and night was closely attended to, but the author feels it incumbent on him to state, that the variations were neither unusual nor considerable. The water with which the city is supplied had suffered no deterioration in quality, nor material diminution in quantity, notwithstanding the long continuance of dry weather; and the people suffered no want, as far as could be ascertained, of this necessary article. With respect to contagion the author thinks it unnecessary to allude to this principle as an exciting cause of our Dysentery, it being unanimously admitted by physicians that this disease, under ordinary circumstances, is not contagious in Ireland.

It is impossible, in fine, when we review the cir-

cumstances under which this epidemic appeared, not to endeavour to connect the sensible qualities of the season, viz. heat and drought, which were unusual and excessive, with the origin of this epidemic, though the precise links of this connexion are not as discernible as the connexion itself, which is palpable. It must be recollected that Dysentery is a disease nearly endemic in warm climates, and that in temperate climates it is the frequent, if not constant concomitant of great and unnatural extremes of temperature, whether these be of heat or cold, but that the former seems by far the most favourable to its generation in an epidemic form. In the curious and valuable history of the weather left us by Dr. Reilly, he informs us that in the space of forty years, through which his observations extended, Dysentery was epidemic ten times in autumn, six in summer, two in spring, and five in winter; a proportion which clearly establishes the agency of heat and season in the production of this disease.

In the years 1817-18 Epidemic Dysentery reigned conjointly with Epidemic Fever, and spread its ravages through the whole of Ireland for nearly three years, through every variety of season. On this occasion the predominating character of the seasons was exactly the reverse of the present, viz. excessive cold and wetness; and the exciting and

concurring causes were obvious and palpable, viz. on the one hand famine and unwholesome food, and on the other harsh, inclement, and unnatural seasons. We find, in fact, a different order of phenomena co-operating to produce this disease, a fact which proves that Nature, though constant, is seldom uniform in her operations, and delights to effect the same objects by various and often contradictory means ; and it also shows the folly, at least in medicine, of aiming at too rigid a simplification of causes.

The author shall not attempt any theoretic explanation of the operation of heat and season in producing Dysentery, but confine himself simply to the establishment of the fact of their connexion. The further investigation of this connexion he must leave to the reader's own reflection. A very ingenious view of this subject will be found in the learned systematic work of Dr. Good on the Study of Medicine, under the head of Remittent Fever.

The author is aware that his etiological views will not meet the concurrence of those who maintain the omnipotence of malaria, or atmospheric miasm, as an exciting cause of epidemic diseases, and among others of Dysentery ; a doctrine which flourished for many ages in medicine, and which seems likely to resume its ancient credit in modern times. The author admits the obscurity and diffi-

culty of this branch of pathology, and the powerful efficacy of local insalubrity in engendering particular diseases ; but in the instance before us he conceives that the vicissitudes of season and temperature, and the sensible qualities of the atmosphere alone, afford an adequate and intelligible solution of the origin of Autumnal Dysentery, without resorting to the more occult agencies of Nature, which elude the grasp of human research.

For further remarks on this subject he takes the liberty to refer to his work on the Acute and Chronic Dysentery of Ireland. The symptoms of the Epidemic under consideration were in perfect unison with the etiological view above stated, and afford further evidence of its correctness. These were far more of a bilious character than they occur in the ordinary forms of the disease, and resembled, as nearly as may be, what is called the hepatic flux in warm climates. Cholera, the bilious cholera of our climate, prevailed to such an extent simultaneously with Dysentery, particularly at the commencement of the Epidemic, that the first stage of this malady may be regarded as a complicated Epidemic Cholera and Dysentery, and each disease seemed alternately a symptom of the other. The strongest evidence, however, of the direct agency of season and temperature on the present occasion is to be derived from the phenomena of the subsi-

dence and disappearance of the Epidemic, which proceeded gradually, observing nearly an exact proportion with the advance of cold weather, and finally disappeared when this latter was completely established.

The author has been less fortunate in his opportunities for making dissections in the present Epidemic than in that of 1817 and 18, owing to the more scrupulous enforcement of a regulation which exists in Cork-street hospital, prohibiting the physicians from making dissections in that institution under any circumstances. To remedy this defect he has availed himself of the dissections made at Sir P. Dun's hospital by Surgeon Jacob, whose talents and well-known anatomical accuracy will, he is sure, render them an object of interest to the pathological student, and he trusts they will convey to the reader a satisfactory view of the morbid anatomy of the present Epidemic Dysentery.

Those parts of the dissections, not illustrative of the pathology of Dysentery, are omitted.

ABSTRACT OF DISSECTIONS MADE AT SIR P. DUN'S
HOSPITAL.

DISSECTION I.

Oct. 21, 1825. Mary Connell, æt. 60. Dead twelve hours. *Dysentery with dropsy.*

Liver enlarged, of a lighter colour, and harder than natural. Several patches of effused lymph adhering to mucous membrane of great intestine. The intermediate parts rather more vascular than natural, but not inflamed. A considerable quantity of serum in cavity of abdomen.

DISSECTION II.

Nov. 16, 1826. Hugh Reilly, æt. 60. Dead six hours.

Transverse arch of the colon remarkably thickened, having the omentum folded up, and adhering to it; it had also contracted extensive adhesions with the stomach and small intestines. Peritoneal surface of the small intestine partially inflamed.

Mucous membrane of transverse arch of colon in a state of ulceration, and covered with masses of lymph, mixed with extensive black sloughs.

DISSECTION III.

Nov. 26, 1825. Alicia Judge, æt. 50. Dead twenty-six hours. *Dysentery with dropsy.*

About a pint of opake turbid fluid in cavity of abdomen. Small intestine remarkably vascular, and rather thicker than natural. Great intestine much thickened, its mucous membrane covered by large masses of lymph. Liver, but especially the left lobe, much smaller than natural, and beset with numerous small reddish tubercles; superiorly it adhered to the diaphragm, and inferiorly to the contiguous viscera. Gall-bladder full of apparently healthy bile. Spleen about three times the natural size.

DISSECTION IV.

Sept. 4, 1826. Michael Ryan, æt. 50. Dead twenty hours. *Acute Dysentery.*

Great intestine not thickened, or at least not so much so as is usual in bad cases of Dysentery. Mucous membrane studded with small shallow patches of ulceration, and lymph adhering to them; its sur-

face covered with a yellowish uniform fluid of the consistence of pus. Upon the whole the disease of the mucous membrane did not appear very considerable, nor was it more vascular than usual.

DISSECTION V.

Nov. 17, 1826. Amelia Clare, æt. 46. Dead twenty-four hours. *Dysentery with dropsy.*

Slight general anasarca. Peritoneal cavity contained about a quart of straw-coloured fluid. Mucous membrane of the great intestine, especially in the vicinity of the rectum, more vascular than natural, ulcerated, but not extensively, and covered with large patches of flocculent lymph. This state of disease extended from the rectum to the caput coli. Liver not enlarged, but diseased; surface irregular and granulated, and of a dirty brown colour; the substance studded with small specks or tubercles of the size of a pin's head, of a yellow colour, and such as might be conceived to arise from depositions of concentrated bile. Gall-bladder distended with a straw-coloured fluid.

DISSECTION VI.

Dec. 13, 1826. Laurence Byrne, æt. 20. *Dysentery after fever.*

Veins of small intestine gorged with blood, giving a purple colour to the entire tube. The mucous membrane partakes of this vascularity, but is not ulcerated. Mucous membrane of the great intestine, from the rectum to the cœcum, covered with a thick layer of lymph; where the lymph does not adhere, the intestine is of a chocolate colour.

DISSECTION VII.

Dec. 25, 1826. James Kelly, æt. 40. Dead forty hours. *Dysentery with dropsy.*

Abdomen contained nearly two gallons of whey-coloured fluid. Mucous membrane of duodenum and left portion of jejunum highly vascular, and covered with lymph. Entire colon from the cæcum to the rectum greatly contracted, and much more vascular than natural. Mucous membrane near the rectum studded with small points of ulceration. Liver of a porphyry colour, but not enlarged. Gall-bladder contained a very small quantity of pale-coloured bile.

DISSECTION VIII.

Feb. 18, 1826. Mary Dignum, æt. 39. Dead eight hours. *Acute Dysentery.*

Liver of a lighter colour than natural, and the

section presents rather a yellowish red appearance. Mucous membrane of ileum covered with patches of ulceration. Mucous membrane of large intestine dotted with a number of elevated ulcers of the same description.

DISSECTION IX.

Sept. 2, 1826. Patrick Carney, æt. 60. Dead twelve hours. *Acute Dysentery.*

Great intestine highly vascular externally, and contracted throughout its whole extent. Mucous membrane covered with a uniform layer of white lymph, interspersed with red patches, which appear to be portions of the membrane deprived of their covering. Near the rectum the lymph is in greater quantity, and adheres to the surface in rugged folds. The entire of the intestine is destitute of fæces, the mucous membrane being merely covered with a purulent matter containing a slight admixture of blood.

DISSECTION X.

Sept. 10, 1826. James Neil, æt. 45. Dead eight hours. *Acute Dysentery.*

Peritoneal coat of the intestines presents in many places the bluish vascularity characteristic of

inflammation ; it is also rough, soft, and villous, and on gently scraping it, lymph is raised on the edge of the knife. Great intestine of a deep purple hue ; its coats enormously thickened. Mucous membrane of the transverse and left portion of colon covered by a dense layer of lymph, which, with the membrane itself, appears to be in a gangrenous state, being nearly black, and very fetid. Cæcum very slightly diseased, presenting only small patches of ulceration. Mucous membrane of the ileum, near the cæcum, studded with small elevated points, which are highly vascular.

DISSECTION XI.

Dec. 17, 1826. Ellen Anderson, æt. 22. Dead twenty-four hours. *Dysentery, with chronic catarrh.*

Liver firmly adherent, by bands of old formation, to diaphragm ; its texture firmer than natural, of a deep yellow colour, and granular appearance. From the commencement of the transverse arch of colon to rectum, mucous membrane highly vascular and ulcerated ; the vascularity and ulceration increase as we approach the rectum. The membrane of the transverse arch is nearly complete, but vascular, and presents in some places the appearance of being regenerated. The descending portion presents nu-

merous patches of ulceration with vascular edges, leaving in some places very slight remains of the lining membrane. A coating of lymph covers several of the ulcers.

DISSECTION XII.

Oct. 6, 1826. Ellen Carrol, an old emaciated female. *Chronic Dysentery.*

Stomach with the hour-glass contraction. Large intestine highly vascular, and somewhat thickened, with ulceration of its mucous membrane.

SUMMARY OF MORBID APPEARANCES IN TWELVE CASES.

Liver diseased in six. Spleen in three. Small intestine (chiefly ileum) inflamed or ulcerated on its mucous surface in eight. Great intestine diseased in twelve; gangrenous in one; much contracted in two; ulcerated and inflamed in all. Colon and rectum parts most diseased.

AN ACCOUNT
OF A
DISSECTION OF A DISLOCATED HIP,
WITH REMARKS.

BY WILLIAM WALLACE, M. R. I. A.,

&c. &c. &c.

Read by Dr. Reid, July 2, 1827.

As this dissection was afforded by a subject accidentally brought into my dissecting-room, nothing is known of the history of the case ; but the state of the parts engaged leave no doubt that it must have been many years since the bone had been dislocated, and from the appearance of the body it may be concluded that the subject was not less than fifty years of age.

The various objects worthy of attention in the dissection may be classed under the following heads :

The external conformation of the limb.

The motions of which the limb appeared to have been susceptible.

The state of the muscles of the limb.

The state of the vessels and nerves.

The state of the ligaments.

The state of the bones, and of the articular cartilages.

The most accurate conception of these objects may be obtained from the following notes, which were taken at the time of dissection.

External conformation.—The limb is so much inverted that the great toe is applied to the tendo Achilles of the opposite limb. It is shortened nearly four inches, and also wasted; the thickest portion of the thigh and leg measuring, each, an inch and a half in circumference less than the same parts of the opposite limb. The pelvis is elevated considerably at the side corresponding to the dislocation. There is a remarkable fullness at the middle of the hip, evidently produced by the head of the femur, in front of which the trochanter lies. The cuticle of the sole of the foot of the dislocated limb is not nearly so thick as the same part on the opposite limb.

Motions of which the limb is susceptible.—Rotation inwards is not impeded, for the state of inversion, in which the limb naturally lies, may be increased. Rotation outwards is so limited that the foot cannot be everted beyond that line in which the toes are directed exactly forwards. Flexion is slightly limited. Adduction is natural. Abduction very limited. Extension cannot be increased beyond the direction of a straight line; or, in other words, flexion backwards cannot be performed.

Muscles.—The gluteus maximus is increased in breadth, but diminished in thickness and length. The gluteus medius is decreased in thickness; the posterior edge of this muscle runs exactly over the head of the femur. The diminutive size of the gluteus minimus is still more remarkable. All the glutei are paler than the same muscles of the opposite limb. This also is more obviously the case in respect to the minimus, for the texture of this muscle resembles adeps rather than healthy muscular fibre. The length of the pyriformis, exterior to the pelvis, does not exceed one inch and a half. It is rounded in its form, and entirely fleshy; in place of extending to the trochanter it terminates at the distance of some inches from this process, in the new capsule, which covers the head of the femur. There is not a trace of the obturator internus, its place being occupied by a quantity of fat of a peculiar gristly texture. The quadratus and gemini are

pale and small, and are bisected by an irregular tendinous line. The direction of these muscles, between their points of attachment, is more oblique than natural. The psoas and iliacus internus are diminished in size, and their line of direction from the brim of the pelvis to their connexion in the lesser trochanter is altered; they extend from the part at which they escape from the pelvis in a direction almost horizontal, outwards and backwards. The triceps adductor is shortened; and those parts of this muscle, which terminate in the linea aspera, extend more in a horizontal line than natural. The pectinalis is greatly diminished in size, and its direction is very nearly horizontal. The gracilis is wasted; and the direction of the obturator externus is oblique, being slightly upwards from its origin to its insertion.

Vessels and nerves.—The femoral vessels and nerves, having passed under Poupart's ligament, sink into a deep fossa, and extend backwards and outwards, until they approach the lesser trochanter; they are much more convoluted, or serpentine, than the corresponding vessels of the opposite limb. The sciatic nerve is flattened, curved in its direction, and its vessels are varicose. Its entire structure appears as if it had been the seat of chronic inflammation.

Ligaments.—A very strong ligamentous fasci-

culus extends between the anterior and lower part of the ilio-pubic symphysis and the lesser trochanter. This must have performed the function of a check ligament to the motion of eversion, for any attempt at turning the limb outwards renders this ligament very tense. A thick capsule surrounds the new articulating surface of the ilium, and also the head and neck of the femur. This capsule is connected to the edge of the new acetabulum, and extending from this over the head of the femur, terminates by uniting with a mass of firm, ligamentous, cellular substance, which surrounds the neck and lesser trochanter. This capsule does not, however, form a regular cavity, for in several places bands cross between it and the non-articular portions of the head of the femur; and although its inner surface is smeared with synovia, it has not the smooth aspect of an original synovial membrane. There is imbedded in the capsule, and forming, as it were, a portion of it, a piece of bone of a rounded figure, half an inch in diameter. That surface of this piece of bone which is directed towards the joint is smooth, but not covered by cartilage; it is placed exactly above the part where the femur passed out of the acetabulum at the time of dislocation, and it has the appearance of having been a portion of the brim of this cavity which had been detached at the time of the accident. The structure of the capsular ligament is not distinctly fibrous, but is composed of a

condensed cellular substance. There are no remains of the round ligament.

Bones.—The anterior, internal, and inferior portion of the head of the femur is applied to the dorsum of the ilium; the great trochanter being thrown forwards; or, in other words, it is that portion of the head of the femur which, in the natural situation of parts, was directed inwards, forwards, and downwards, which is applied to the ilium. The articulating surface, thus formed, on the head of the femur, is flat, or very gently convex; it is about one inch and a half in diameter, smooth, whitish, hard, and polished, though not uniformly so, for in some parts the bone appears red and porous. The remaining portion of the head of the femur is not opposed to bone, but applied to the capsule which surrounds the joint. It has lost its natural rounded form, is very irregular, and deprived of its cartilage; but some parts of it are covered by a substance of the nature of ligament. There are several small pits, or fossæ, on the head of the femur, but none of them appear to have been the depression for the attachment of the round ligament. There is an irregular ossific deposit round the lesser trochanter, and also between this process and the present articulating surface.

The surface on the ilium, to which the head of the femur is applied, is elevated half an inch above

the level of the surrounding bone, so that this cavity appears to be formed upon a plate of bone, which has been planted, as it were, on the ilium. The superior and posterior portion of the new acetabulum, or about two-thirds of its whole extent, is smooth and bony, and exactly resembles in appearance the corresponding surface upon the head of the femur, with this exception, that it is very slightly concave. The anterior and lower portion of this cavity is somewhat irregular, and made up of ligamentous prolongations, and of small osteo-cartilaginous excrescences, of a cauliflower shape. These spring by small peduncles from the bottom of the outer and upper portion of the old acetabulum, and thus form a portion of the new articulating surface. The aspect of the articulating surface on the ilium is backwards, outwards, and upwards. There is scarcely a vestige of the old acetabulum; in its situation there is a superficial fossa of a triangular form, filled with a fibrous substance, continuous with a surrounding cellular tissue. There is no articular cartilage on any portion of the bones which form the new joint. There is a deep groove, one inch in depth, formed on the outer side of the ilio-pubic symphysis, for the lodgment of the conjoined tendons of the psoas and iliacus muscles, in their passage over the brim of the pelvis to the lesser trochanter.

An accurate conception of the situation of the

new articulation may be formed from the following measurements :

	INCHES.
From the trochanter major to the anterior and superior spine of the ilium, - - - -	$4\frac{5}{8}$
From the trochanter major to the anterior and inferior spine of the ilium, - - - -	4
From the trochanter major to the posterior and superior spine of the ilium, - - - -	6
From the trochanter major to the posterior and inferior spine of the ilium, - - - -	$5\frac{1}{2}$
From the trochanter major to the tuberosity of the ischium, - - - -	4
From the centre of the new acetabulum to the anterior and superior spine of the ilium, - -	$3\frac{1}{2}$
From the centre of the new acetabulum to the anterior and inferior spine of the ilium, - -	$2\frac{1}{2}$
From the centre of the new acetabulum to the posterior and superior spine of the ilium, - -	$4\frac{1}{2}$
From the centre of the new acetabulum to the posterior and inferior spine of the ilium, - -	$3\frac{5}{8}$
From the centre of the new acetabulum to the tuberosity of the ischium, - - - -	$2\frac{5}{8}$

REMARKS.

This was a dislocation of the femur directly upwards on the dorsum of the ilium, accompanied by a fracture of the superior edge of the acetabulum. It may be called a partial dislocation, for a portion of the original acetabulum formed a part of the new articulating surface for the reception of the head of the femur.

The shortening and inversion of the limb, the situation of the head of the thigh bone, as felt prior to dissection through the integuments and muscles, and the nature and extent of the motions of which the limb appeared to have been susceptible, constitute exactly the symptoms which occur in this form of dislocation.

It was remarkable how much the pelvis was elevated on the side corresponding to the dislocation. When the situation occupied by the head of the femur is considered, it is clear that the limb was not necessarily shortened from that cause more than one inch and a half. Yet, upon comparing the length of the two limbs, the malleoli, patella, &c. &c. of the dislocated limb, were found to be nearly four inches above the level of the same parts of the opposite limb. This shortening was therefore owing to the direction of the pelvis, and so great a change in this part of the skeleton must have been the result of time. The elevation of the pelvis on the side of the dislocation, is contrary to what might have been expected upon a superficial view of the matter ; for it is natural to suppose, that, as the limb must have been shortened by the dislocation, there would be an effort to depress the corresponding side of the pelvis, for the purpose of making amends for this shortening. The elevation of the pelvis on the dislocated side may, however, be easily accounted for in the following manner :—In consequence of

the obliquity of the union between the ilium and femur, the dislocated limb must have been unable to bear its own proportion of the super-incumbent weight of the body. The trunk was, therefore, inclined over the sound limb, to bring the centre of gravity of the body within the base of sustentation afforded by that limb; but this could not be done without a corresponding elevation of the pelvis on the dislocated side. In confirmation of this view of the matter it may be remarked, that the cuticle on the sole of the foot clearly demonstrated that the dislocated limb had supported only a small portion of the weight of the body.

The entire, or a part of the muscles of a limb which has been dislocated, frequently undergo important changes: thus,

1st. When the bone is allowed to remain unreduced, and in such a situation that the natural movements of the limb are prevented or restricted, its muscles become diminished in size, or wasted. This change had obviously taken place in almost all the muscles of this limb, as appeared by comparing the measurements of the thigh and leg with those of the same parts of the opposite member. But although there was in this case a general shrinking or wasting of the limb, this was more obvious in some of the muscles than in others, and in none more than in those whose office it was to rotate the

limb outwards; a motion which, from the situation of the bones, as well as from the existence of the check ligaments that extended from the ilio-pubic symphysis to the lesser trochanter, had been rendered almost impossible.

2ndly. If, at the time of dislocation, a tendon be torn across at its junction with the muscle, the detached ends of the muscular fibres become connected with those parts with which they may be brought in contact. This appears to have been the case with the pyriformis.

3rdly. If a muscle be torn through its fleshy fibres, they are after a time re-united to each other; not, however, by muscular tissue, but by tendinous fibres. So that the muscle assumes the character of a biventer or digastric. A re-union of this kind was exhibited by the gemini and quadratus femoris.

4thly. If the texture of a muscle be so torn or injured as to render its re-union by tendon impracticable, the entire texture of the muscle becomes changed, or rather the muscle is absorbed, and there is deposited in its place a substance of a peculiar texture, resembling a mixture of adeps and fibro-cartilage. This appears to have occurred to the obturator internus.

5thly. When the distance between the points of

attachment of a muscle is either increased or diminished, the muscular fibre has the power of undergoing such changes of shortening or elongation as may be necessary to adapt itself to its new state. Thus, muscles are sometimes shortened and sometimes elongated. The triceps femoris, and some others, were in this case shortened, and the quadratus and gemini were elongated.

When any of the ligaments of a joint have been torn during the act of dislocation, if the bone be allowed to remain in such a situation that the torn ligaments can no longer serve any useful purpose, they are completely absorbed, and disappear, or they are converted into cellular tissue, and become confounded with the surrounding parts. Thus, in the present case there were not the slightest remains of the round ligament.

In all complete dislocations of the enarthrodial joints the capsular ligament must necessarily be ruptured. If the bone be returned into its natural situation the laceration is quickly repaired; but if the displacement be allowed to continue, a perfect capsule will be formed round the new joint, and the original lacerated capsule will contribute to form a greater or a smaller portion of this new capsule, according to the situation of the parts. It is more than probable that the capsule of the joint was lacerated in the dislocation here described, although

it was only a partial dislocation. Yet of this laceration there was not any appearance. The new capsule was remarkable for its great thickness, but it was not formed of those regular fibres which we may suppose entered into the formation of the original capsule of the joint. It had the appearance of firm, condensed, cellular substance; and although its inner surface had the power of secreting synovia, it did not exhibit the smooth, shining aspect of synovial membrane.

Nature does not appear to possess the power of forming articular cartilage in those accidental joints which result from unreduced dislocations. The new articular surfaces are always covered by a lamina of bone, which resembles in appearance that ivory-like substance sometimes found on natural articulating surfaces. As a cartilaginous surface cannot play easily on a bony surface, the original cartilage, which may have covered the head of the dislocated bone, becomes absorbed, and its situation occupied by the same kind of tissue as that which forms the new surface, upon which the head of the bone may be applied. In accidental joints, the result of disunited fracture, the ends of the bones appear to be covered by an articular cartilage. This is not, however, of the nature of articular cartilage of original formation; it corresponds in its character to the temporary cartilage of bones, or, more properly

speaking, it is bone in a state of imperfect formation.

If, in consequence of dislocation, the head of a bone be removed from a cavity covered by articulating cartilage, such, for example, as the acetabulum, this cavity becomes contracted in size, and altered in its form. In short it becomes nearly obliterated, and the cartilage, which formerly covered its surface, disappears, being replaced by ligamentous fibres, which grow at right angles from the surface of the bone, and these extending outwards become confounded with the surrounding parts. Thus, in the present case, there was scarcely a trace of the original acetabulum, except at that part where it forms a portion of the new articulating cavity, and its surface was covered by a dense mass of fibrous tissue.

When it is necessary to bring a cartilaginous articulating surface to a new and higher level, and yet to preserve it still as an articulating surface, this is accomplished by the growth of excrescences, which are connected by peduncles to the surface from which they spring. This fact was remarkably exemplified in the present dissection by those excrescences which grew from the bottom of the upper part of the original acetabulum, and which thus raised that portion of the old cavity to a level with the new articulating surface. These excrescences, more-

over, illustrate the mode of formation of those cartilaginous bodies which we occasionally find loose in joints. For it is evident that a trifling force might have detached these bodies from the surface upon which they grew, and they would then of course be found loose in the interior of the joint.

Of all the textures connected with unreduced dislocations, there are none which exhibit more remarkable changes than bone. It is quite wonderful to observe the facility with which this apparently unyielding tissue adapts itself to all those varied states which may be required. At one time we find it so completely removed that not a vestige of large masses of it remain, and on other occasions great additions are made to the original bone to serve useful purposes. Again, without either increase or diminution of the quantity of osseous matter, we find the bone to be, as it were, so completely new modelled, that its acquired shape has scarcely any resemblance to its former figure. In the present dissection, the acetabulum was nearly removed, a new plate of bone for the formation of an articulating surface was deposited on the ilium, and the head of the femur was completely re-modelled. But respecting the changes which the bones undergo in such cases I need not enlarge, for on this subject there are ample details in books, and more particularly in the invaluable work on dislocations by that

brilliant and profound ornament of our profession,
Sir A. Cooper.

I have been thus particular to take advantage of the present opportunity of alluding to some of the most remarkable proofs which can be afforded of the power possessed by our structures to adapt themselves to new circumstances, and this I have done not merely for the purpose of enlarging our views respecting the especial subject of dislocations, but to illustrate the great resources with which our system is endowed for the reparation of injuries in general, well convinced that a clear conception and a constant recollection of the existence of these resources are of the highest importance in the practice of surgery.

CLINICAL OBSERVATIONS
MADE DURING
THE EPIDEMIC FEVER OF 1826.

By ROBERT REID, M. D.,

PRESIDENT OF THE ASSOCIATION, &c. &c.

Read April 2, 1827.

HAVING occupied so many pages in the third volume of the Transactions of the Association while endeavouring to explain what I conceive to be the nature of fever in general, I propose to confine myself, on the present occasion, to a detail of such circumstances as appeared to elucidate the nature of the Epidemic Fever of 1826.

This Epidemic began to develope itself about the end of February, or beginning of March ; it continued to increase in extent and severity until the months of September and October. It remained pretty steady during the months of November and December. In January, 1827, intermittent fever of various types began to be observed, the Epidemic

evidently being on the decline ; and towards the end of May, or beginning of June, it may be considered to have ceased altogether. It has been a long time observed by physicians, that all other diseases seem to be absorbed in a prevailing epidemic. This circumstance has been very remarkable during the Epidemic at present under consideration. The consequence was, that upon the cessation of the fever, a variety of diseases were to be observed in the hospitals. These being admitted with the febrile symptoms of the Epidemic, by proper treatment in a day or two the real disease became unmasked.

The history of this Epidemic contributes to confirm the opinion made on former occasions, that Epidemic Fever may arise in this city at any period of the year, as the one at present to be noticed became developed at a season different from any at which the disease visited Dublin of late years. Several Epidemics have come under my observation, each differing more or less from the one immediately preceding. The same has been observed to occur in former ages, and the celebrated Sydenham has the candour to acknowledge, that many a valuable life has been sacrificed at the commencement of each Epidemic that engaged his attention, before the proper mode of combating the disease had been discovered. By examining the records of medicine, it will be observed, that when several Epidemics are compared with each other, many symptoms will be

found to correspond in two, between which several other Epidemics have intervened. It may therefore be probable, that a periodicity of phenomena may be detected in contagious fever, which being known, may enable the physician to apply the recorded experience of former times to the successful treatment of any new Epidemic. Although the subject of fever, however various, has been so frequently, so ably, and so successfully discussed, that it is now grown familiar to the reader, and difficult to the writer, yet the importance of recording the general character and prominent symptoms of each Epidemic must be obvious to every physician.

In individuals affected with the late Fever, the disease usually increased in severity until the sixth day, when a rigor of great intensity took place, sometimes followed by profuse perspiration, sometimes not. When this occurred the fever was generally at an end, and the patient became convalescent. It was remarkable that the chance of speedy convalescence was in proportion to the severity of the rigor. By far the greater number of cases, however, had not this favourable termination. The disease yielded with difficulty to the usual remedies, and the patients were at length brought to a doubtful convalescence, thinking themselves well. The disease exhibiting no tangible point, the physician endeavoured to persuade himself of success, when perhaps the day after, to his surprise, he was in-

formed of the patient's death. I shall select some cases of this nature, and having examined them after death, I propose to make a few deductions which the facts may appear to authorize.

Ann Watson, æt. 19, five days sick of fever, was admitted into the Fever and Dysentery Hospital, Kevin-street, on the 9th January, 1827. The disease appeared mild, her bowels were regulated by purgatives on the day of admission. She was then ordered the saline diaphoretic mixture, which was continued each day, and she appeared gradually getting better until the 13th. In the evening of this day she seemed in a quiet sleep for some time, she then awoke, gave a sigh, and died.

Upon examination next morning, the body appeared of a full habit, red auburn hair, and clear complexion. The parietes of the abdomen were fat, the stomach was much distended with flatus, some dark spots were observed on the mucous membrane about the lesser arch; duodenum and other intestines natural; much fat on the omentum; no unnatural adhesions of the abdominal viscera; some urine in the bladder; a small hydatid in the left ovarium; uterus as if the period of menstruation had commenced. Liver not enlarged, but the colour of a deeper red than natural, and the biliary function apparently suppressed. Much congestion of the vessels about the pancreas, which was small.

Spleen natural. In the thorax, there was found much fat in the mediastinum, and also on the anterior surface of the heart. Much red fluid in the pericardium. Left ventricle of the heart flabby, the parietes thin, and the cavity much larger than natural. On opening this cavity a gush of air rushed out, and it did not contain any blood nor coagulum. The left auricle, on pressure between the fingers, gave a distinct sensation of crepitus from air contained in its cavity. There was no sign of putrefaction in any part of the body. The right auricle was distended with venous blood; right ventricle natural. The contents of the pulmonary veins did not appear to have undergone the usual change in the lungs; although in other respects these organs seemed healthy. The internal surface of the aorta was of a dull pink colour, and the entire structure of the vessel appeared to have its texture softened. This state apparently extended throughout the arterial system.

On raising the scalp from the cranium there was little of the usual vascularity apparent. When the skull was removed, the dura mater was found extremely vascular. When this membrane was raised an extravasation of blood and coagulated lymph was observed covering the entire right hemisphere of the brain, and causing a considerable depression in the middle region. The coagulated lymph pointed as usual to the source of the hemorrhage, which was

ascertained to have flowed from a small vessel at the side of the longitudinal sinus. No extravasation on the left hemisphere. The medullary substance of the brain seemed in a state of congestion, as on cutting into it much watery blood flowed from innumerable points.

Catherine Hannon, a nurse of the hospital, took fever, so as to keep her bed, on the 9th of March. On the 12th she appeared nearly convalescent. On the 13th, in the morning she had a slight rigor, and in eight hours after she was dead.

On examination after death the general surface of her body exhibited a dirty purple, yellow hue. The viscera of the thorax, abdomen, and pelvis, appeared healthy, except a small portion of the ileum, which appeared to have congestion of the mucous membrane. When the skull was raised, the dura mater seemed of a brownish yellow colour, and a yellow matter, as if bile had been suffused, was found between the arachnoid and pia mater. The substance of the brain had also a yellow tinge; nothing remarkable in the ventricles.

William Ludlow died on the 29th March, 1827; he was admitted into Kevin-street Hospital labouring under relapse of fever. He seemed progressively mending until the 28th, when he complained of slight pain of abdomen, and general feel of return-

ing disease, which rapidly increased until the fatal termination.

On examination after death, the fat on the parietes of the abdomen was abundant. The serous surface of the peritoneum appeared quite healthy. The mucous membrane of the ileum exhibited patches of congestion, each to the extent of four or five inches, seemingly with some tendency to ulceration. All the other viscera of the thorax and abdomen were quite healthy. The blood appeared decomposed and watery. The medullary substance of the brain was found congested, and much watery blood was discharged freely from innumerable points on cutting the brain. Much yellow water between the dura and pia mater. The pia mater separated with the utmost facility from the convolutions of the brain, so that the organ could be almost entirely unravelled.

John Anderson was six days ill of fever when he was admitted on the 2d April, 1827. He complained of tenderness of abdomen on pressure; skin and albuginea of the eyes dull yellow. On the 5th he appeared much relieved; had a quiet night. About twelve o'clock this day pain of abdomen again returned; leeches were applied, but before he could get any medicine he turned quite purple, and the fatal event took place.

Owen Brady, hotel waiter, was admitted into Kevin-street Hospital, 24th December, 1827, with fever of several days duration, and extensive slough on the sacrum. By the usual treatment his amendment was slow, however on the 7th the slough was nearly healed, and he was considered convalescent. He continued apparently to improve in strength until the 18th; his bowels now became costive; on the 21st delirium ferox came on, and early on the morning of the 22d he died.

On examination, nine hours after death, the thoracic and abdominal viscera appeared healthy, except that the state of the liver was such as is usually met in subjects who have been previously in the habit of drinking spirits to excess. Upon opening the head much serous blood was discharged when separating the bone, which was deeply marked by the vessels. A deposition of glairy fluid was found between the arachnoid and pia mater. Several spots of congested vessels were observed over the anterior lobes. The ventricles were distended with serous fluid.

Peter Williams was admitted on 18th November, 1826, three days relapsed with fever; had copious thick expectoration; lips purple. The treatment had little effect, and he died on the 23d.

On dissection a large quantity of purulent mat-

ter, like curds of cream, was found in the left pleura, but no adhesions. The right lung was found greatly disorganized, and there were general adhesions apparently of long standing; other viscera healthy.

Master —— had been for several days in fever. He appeared convalescent; a few days after he complained of violent pain in the abdomen; I directed leeches to be applied. Through mistaken tenderness this was not complied with, and in forty-eight hours afterwards he was dead.

In a few hours the body showed a rapid tendency to putrefaction, the abdomen tumid, and the integuments quite green. All the inferior parts of the trunk and extremities, as he lay in bed, almost black. On opening the abdomen all the viscera were covered with a yellow curd-like matter, and a considerable quantity of pus and sanies diffused through the cavity. The liver seemed studded with a crystalline miliary eruption, similar to that which appeared on his back and shoulders during the course of his fever. Lungs healthy. The head not being engaged during his illness, was not examined. His sister had a similar fever about three weeks before, but was cured by having assistance in the early periods of the disease.

Thomas Skinner was eight days ill of fever on the 15th March; on the 20th his disease seemed to

tend to convalescence. On the 25th his skin began to change colour to a dirty yellow, a similar tinge was observed on the tunica albuginea of the eyes, and he complained of pain in his chest and cough. Leeches were applied to his chest, which relieved the pain; however on the 27th his abdomen became tumid and tense, the colour of his skin took a deeper hue, and there was tendency to low delirium. These symptoms by proper treatment were relieved. The abdomen was reduced to the natural state, the cough relieved, with easy expectoration, and his intellectual powers apparently restored. The colour of the skin however still remained unchanged from that dark muddy yellow hue, and his bowels on the 1st April became torpid. Early in the morning of the 2d a tumor began to appear on the right side of his neck; this increased rapidly to an enormous size, and he died in the evening of the same day.

To avoid the farther detail of particular cases, it may be sufficient to state, that in all the subjects I have examined, who have died of the Fever at present under consideration, there have been evidences of the maturation of the disease, modified, of course, by the nature of the parts upon which its influence was directed, and by the accidental state of the individual's constitution. Thus it was sometimes thrown on the vascular system, as in the first case, and by injuring the texture of the vessels, disposed them to rupture, or gave origin to hemorrhage from the

nose and rectum. When the result of the disease has fallen on the substance of the brain, this organ after death exhibited a most remarkable state of congestion. On cutting the medullary mass a quantity of thin blood, apparently in a dissolved state, was poured from innumerable points. These cases were by far the most rapidly mortal; some have occurred to my observation when this state of the brain was about to commence, and before many minutes elapsed, the progressive changes towards death took place while I was standing by the patient. In all the cases of this kind which I have examined, there were observed patches of several inches in extent of a dark colour upon the ileum. Upon opening this intestine, these patches were found to be occasioned by a state of vascular congestion on the mucous surface, sometimes even apparently abrasions were observed; indeed in one case there were several perforations, so that the contents of the intestine escaped into the cavity of the peritoneum. In these cases the fatal train of symptoms generally commenced with abdominal pain, but the state of the brain soon rendered the patient insensible to the progress of disease in the abdomen, although he might be still capable of giving a rational reply to the questions of his medical attendant.

When the patients have survived a day or two after the result of the disease had been deposited on some internal part, bands of adhesions were ob-

served ; but in the rapidly fatal cases, the coagulable lymph and curd-like substance could be wiped off the organ, and then the surface would appear quite sound.

Dr. Stokes relates in his Essay on Contagion the observations of Mr. West, Surgeon to the 27th Regiment, who was appointed to take charge of the Peste Hospital at Rosetta in 1801. This gentleman “ found that, by the application of poultices and
“ other means, independent of mercury, serous or
“ bloody discharges might be produced from the
“ buboes, but that those discharges were not con-
“ nected with the cure of the disease, while true
“ suppuration was so invariably. He also observed,
“ that if the buboes were opened either after death,
“ or during life, before suppuration, whether the
“ disease was mild or severe, they presented a
“ cheese-like appearance, resembling the diseased
“ bronchial glands in those who die of Phthisis Pul-
“ monalis.”

The deposition has sometimes occurred in the form of boils on the external surface of the body, particularly along the back. On the 26th March I discharged a patient who was affected in this manner. He entered the hospital in a high state of delirium ferox ; the treatment he was placed under succeeded in relieving the urgent symptoms, and he gradually approached to a state of convalescence.

Several boils now began to appear on his back and neck. In a few days his recovery appeared complete, he was able to sit up, had good appetite, and was perfectly rational. The treatment by medicine was therefore intermitted for a few days. The boils then ceased to advance to proper suppuration, some appeared actually to have diminished. The day after this was observed, violent delirium again came on, which rendered it necessary a second time to put him under restraint. In a few days the boils began to evince a disposition to advance; by continuing the febrile treatment they came to full suppuration, and entire convalescence was the result.

From these circumstances, I am induced to think that there is some peculiarity in this Fever that disposes to the formation of a morbid matter, which acting like a poison, quickly destroys the powers of life.

While the above was preparing for the press, the last Volume of the Dublin Hospital Reports was published, and as the book now lies before me, I cannot avoid expressing my gratification upon reading a very able paper in that work by Doctor Marsh of this city, upon the subject of the origin and latent period of Fever.

In the former Epidemics which I have had an

opportunity of observing, the disease was overcome by treating the patient so as to keep a proper balance of activity throughout the functions of the animal frame. When death did occur, the fatal event was to be attributed rather to the exhaustion of the powers of life, by long continued struggle, or repeated attacks of the disease, than by the sudden and violent effect of a poisonous influence. In the Epidemic of the years 1817—18—19, many symptoms were observed which seemed to indicate a tendency to generate a morbid poison. But I did not meet with the regular train of symptoms in any individual case such as has occurred in the present Fever.* The generation of this morbid poison appears to take place at some uncertain period of the disease, and seems as if thrown on particular organs or parts, exclusively leaving all other parts of the body apparently in health. Probably the peculiar state of the patient's constitution at the time, may determine the situation where the morbid change may be developed.

A circumstance is recorded to have occurred

* In the third Volume of these Transactions, I have given a detailed account of what I conceive to be the nature of fever. Farther experience has tended to confirm the pathological views respecting the nervous functions, which I laid before the public early in the year 1817, in a treatise upon Tetanus and Hydrophobia, and which, in the paper above alluded to, I have considered more fully as respects the pathology of fever.

during the late war in Spain,* which evinced that an animal poison may be generated by the decomposition of the human frame, which, when taken into the stomach of a healthy individual, is capable of inducing putrid fever. It exhibits an important fact, that although the process of assimilation in the alimentary canal may for a time obviate the destructive tendency of putrid matter taken into the stomach, yet that the powers of life ultimately yield to the reiterated application of such noxious matter.

Being aware of the tendency to generate a morbid poison which was exhibited in the late Fever, I was enabled in many instances to obviate the impending destruction by the timely application of usual remedies. Many cases however occurred in which the disease took its course with such rapidity, that time was not allowed for the remedies to come into operation before the fatal event took place.

* At Valladolid, during the late war in Spain, the palace of the Holy Inquisition was appointed for the barracks of a British regiment. Under the colonnade was a well, from which water could be drawn into the uppermost stories. This water had a sweetish, decayed taste, but for want of better, there being no other well near, and the river Piruerga being at some distance, the soldiers used the well-water both for drinking and cooking. No one regiment in the garrison was so unhealthy, and the prevailing disease was putrid fever, of which there was not the slightest symptom in any other of the regiments. At last the reason was discovered. Skeletons were found in the well, and several were observed with pieces of the flesh still adhering to the bones.

Upon deeply considering these circumstances, it appeared to me that some remedy was yet wanting in the treatment of this Fever, which could act in such a manner as to prevent the formation of a morbid poison, or when such an event had taken place, might be sufficiently efficacious in destroying its noxious qualities, so as to render it incapable of deranging the powers of life.

From the accounts lately published respecting the influence which the hydrochloruret of lime has evinced in destroying animal effluvia, I was induced to try the efficacy of this substance in neutralizing the morbid poison generated in the prevailing fever, if such were really the fact.

In employing any remedy not tried before upon the human constitution, the greatest caution should be observed. I was aware that the hydrochloruret of lime had been employed in surgical practice as an external application. The accounts of its action when applied to disease on the surface of the human body, though by no means satisfactory, yet sufficiently proved that this substance was not an inert remedy. I therefore determined to try the hydrochloruret of lime, first with patients who had no prospect of surviving their disease under the ordinary mode of treatment, and in a manner least liable to produce injurious effects, should it possess any deleterious property. I was therefore induced

to make the first trials in severe cases of dysentery, to be noticed when speaking of that disease.

Being satisfied as to the beneficial effect of the hydrochloruret of lime in dysenteric cases, I shall detail one or two examples of its efficacy in that kind of fever which usually ran rapidly to a fatal termination.

James Doyle, admitted on the 8th March, having been thirteen days ill of fever. He complained of severe headach, bowels costive. Having put him under a treatment, consisting of cold applications of vinegar and water to his head, giving him the saline diaphoretic mixture every second or third hour, with occasional employment of purgatives when necessary, he became apparently convalescent on the 16th.

On the 22d he complained of pain under the sternum, which I relieved by the application of eight leeches, and a little saline diaphoretic mixture.

On the 25th he had a complete relapse of fever. By putting him under proper treatment, which consisted principally of mercurial medicines, on the 29th he became again convalescent. A slight cough however still remained, for which he was directed an expectorating mixture.

2d April. A friend having been permitted to see this patient yesterday, through mistaken kindness induced him to drink some wine. In the night he complained of most violent pain in his head. He now lies nearly insensible. Low muttering delirium. Tongue deep yellow, dry, and furred; great subsultus. Half an ounce of the mixture, with hydrochloruret of lime and tincture of columbo, was directed to be given to him every second hour.

3d. Much better in all respects; general warm perspiration, not profuse; but still some delirium and subsultus. Perstet.

4th. Tongue cleaning; subsultus gone. No delirium.

5th. Still continues to improve. Tongue dry, and he cannot put it outside his teeth, though he apparently makes considerable effort when desired to do so. I directed a blister to his neck, and to continue the medicine as before.

6th. Much foetid discharge from the blister; continues to improve; can now freely put out his tongue when desired. It is now moist and clean at the edges; he has some appetite to-day.

7th. Still improving. The diaphoretic mix-

ture was now substituted for that with the hydrochloruret.

12th. Up and dressed, sitting on his bed-side. Well.

This was one of the most remarkable cases I have witnessed of the efficacy of the hydrochloruret; whether it be considered with reference to the severity of the disease, or to the rapidity of the patient's recovery.

H. C. was nine days ill of fever on the 19th March. She was supposed to have taken the infection by going into lodgings where fever had been previously; but did not know this circumstance until the 18th. She appears of very delicate form, light complexion, and much marked with the small-pox. Complains of great pain in left side, head-ach, flushing; pulse extremely quick, rather ganglionic. Tongue dry and furred.

I directed to have twelve leeches applied to her side, and to take an ounce of the saline diaphoretic mixture three times a day.

From this treatment some relief was obtained; however on the 22d, cough and the febrile symptoms were increased; the headach was severe. On the 24th, a red papular eruption appeared very general

over the chest, arms, and back ; the intervening skin seemed white and natural ; febrile symptoms still increasing ; great debility ; low delirium ; great coldness of the extremities ; bowels free, but evacuations very dark-coloured.

Half an ounce of the mixture with hydrochloruret of lime, was directed to be taken three times a day.

25th. Tongue moist ; easy sleep since this morning ; extremities warm. No apparent change in the eruption.

27th. Eruption nearly gone. Stools now natural. Has continued steadily getting better since 24th. Still some headach. Tongue clean. The indications for employing the hydrochloruret having now disappeared, she was directed the saline diaphoretic medicine, and on the 31st she was convalescent.

She continued gathering strength until the 5th April, when a swelling of the right ear attracted notice. On the 6th the swelling was increased, and erysipelas became developed. This was treated as usual in such cases, and on the 15th her convalescence was complete.

Benjamin Hepinstall was two days ill of fever.

On his admission, 13th March, he complained of pain in the abdomen, which was extremely tender on pressure, and he exhibited an expression of considerable anxiety. These symptoms being relieved, his head became much affected. On the 18th he was apparently convalescent. On the 19th, however, the ganglionic disease again made its appearance. The former treatment was adopted, and leeches were applied to the abdomen, without apparently having any efficacy towards arresting the progress of the disease. On the 22d he lay on his back. There was almost total prostration of strength. Pulse scarcely perceptible; occasional cough. The entire surface of the body, limbs, and tunica albuginea of the eyes, of a dirty yellow colour. A dull purple circumscribed colour in the cheeks. Tongue dry and loaded. Considering this patient in a proper stage of the disease, to derive benefit from the hydrochloruret of lime, a mixture with this medicine was directed to be taken three times a day.

23d. After taking the medicine three times yesterday, he had a quiet night. Slept well. Tongue now cleansing and moist. Yellowness of the skin not apparently changed, but the purple flush has disappeared from his cheeks. Pulse full and calm. He continued to mend steadily under this treatment until the 26th, when all symptoms of ganglionic disease being now gone, his pulse was become spi-

nal,* and he complained of great pain in his back. Finding that the mixture with hydrochloruret of lime had apparently no effect upon these symptoms, I reverted to the usual treatment in such cases, and on the 31st March he was discharged cured.

In the following case the efficacy of the hydrochloruret of lime was very conspicuous, and as the account was transmitted to me by a gentleman whose accuracy I have every reason to rely upon, I shall beg leave to transcribe his letter.

“ MY DEAR SIR,

“ Permit me to submit to you the following outline of a case which came under my management.

“ James Henley, of No. 4 Smock-Alley, aged 14 years; rather delicate frame and constitution, and who has had within the last year, by the mother's account, four or five attacks of fever, each of which lasted five days, and so regular in its duration, that she never called in a medical attendant, but treated him with simple purgatives. The last attack was about five weeks ago.

“ I saw the boy on the 7th June, then in bed; he was complaining of headach; had white, loaded

* Vide Paper on Fever in third Volume.

tongue, hot skin, and pulse 130; secretions and excretions suspended. The usual and most approved remedies were given. The fever however seemed determined to make its way; and although a symptom most urgent was repressed for the time, yet delirium, partly of the trembling character, and occasionally violent, came on, attending by picking of the bed-clothes, and involuntary discharges of urine and fæces.

“ On the fifteenth day of the fever the belly was tympanitic, hot and dry to the touch. Petechiæ came out extensively on the fifth day, and retired completely on the eleventh. There was great loss of flesh, and the whole frame considerably emaciated.

“ In the progress of these extreme symptoms, enemata and medicines by the mouth were tried to suspend the fatal moment, which to me then appeared inevitable. I then considered I had an opportunity to try that which we have witnessed the extraordinary effects of in the Kevin-street Hospital. I provided (for I would not rely on prescriptive accuracy) the following on the 19th June :

℞. Hydro-Chlor. Calc. gr. x.
Syrup. dilut. ℥iv.
Add. Tinct. Columbo, ʒij.
Capt. Cochleare Magnum 2dis. horis.

“ 20th June. At four o'clock this morning he

had finished the bottle which I had sent yesterday, and the apparent effect was, that from ten discharges which he had passed on the 18th, they accurately counted but four since the mixture was given. I renewed the bottle, and ordered it every third hour in future.

“ 21st. Slept for the first time since he took ill last night; his friends thought it unnatural; he remained in perfect rest for eight hours, and had no involuntary dejection whatever since yesterday. I examined him now a little more closely. I found the tympanitic character gone; the belly soft and natural; the pulse 86, and full; the delirium subdued; tongue clean and soft; and the patient's feelings of composure and improvement very evident. He now asked cravingly for food. I ordered him light chicken-tea, and directed pills, of one grain pil. hyd., two colocynth, and two camphor, to be taken every six hours, and the camphor julep occasionally.

“ I have seen him daily since, and it is only necessary to remark, that he is quite convalescent.

“ To give you the entire treatment of this case would extend this letter beyond my wishes, as I had only in view, when I commenced it, to inform you of my success in the application of the lime.

“ You will perceive that it was on the fifteenth or sixteenth day all hopes seemed to vanish, although I tried wine and other stimulants to support the pulse, which on the day the hydrochloruret of lime was given I could scarcely count, and debility at its lowest scale.

“ If you think this case worthy the public eye, make the use of it you may desire. I can only add, that I have addressed it to you from a sense of duty, having experienced your kind and liberal observations on those cases which we investigated in hospital practice, and from your unwearied zeal in the advance of professional knowledge.

“ Believe me, my dear Sir,

“ Your obliged Friend,

“ JOHN STOKES.”

FRENCH-STREET.

The following case exhibits the influence of the hydrochloruret of lime in controlling disease of the pulmonary organs, resulting from febrile excitement.

Ann Lenon was admitted into the fever ward No. 5, on the 7th February, 1827. She complained of great headach, pain in her bowels, and other

febrile symptoms, in such severity, as to require to be bled largely on two successive days.

On the 10th she was getting worse, and a blister was applied over the whole abdomen.

On the 11th better.

13th. Abdominal pain quite relieved ; but complained of severe pain now in her chest. A blister was applied with some benefit.

16th. The pain in her chest being still severe, another blister was applied, and a pectoral mixture was ordered.

17th. Breathing extremely difficult, which induced Dr. Brereton, whose patient she then was, to direct that she should again be bled.

By this bleeding she was much relieved, and, her improvement continuing progressive, on the 20th she was remitted to the convalescent ward.

She continued apparently to recover strength until the 6th March ; she then complained of pain and sense of fullness in her chest. I directed leeches to be applied, from which she derived some relief. She complained, however, of sense of constriction about her throat. Soon afterwards she began to

expectorate a considerable quantity of thick viscid mucus. Countenance bloated. As the disease advanced, in a few days she became affected with severe rigor, which sometimes continued for several hours. Her voice became nearly extinct. At length she could only swallow liquids, and was threatened with suffocation at every moment.

It would be unnecessary to detail the treatment which I adopted up to this period ; it was varied accordingly as the circumstances of the case appeared to require. No plan of treatment, however, which I put in force, appeared to have any influence in arresting the progress of the disease.

On the 24th March, the state of her case was as follows :—She had rigor every day since the 17th ; voice and appetite almost gone ; mucous rattle in breathing ; could take no food, but had constant thirst, which she attempted to relieve by supping cold water ; expectoration thick, and got up with difficulty ; cheeks bloated with purple hue ; tongue furred.

On the 25th, I directed the mixture with hydrochloruret of lime every second hour.

29th. She appeared to get better on the 26th, and continued steadily to improve, her appetite was returning, her tongue was clean and moist, and since the 25th she had not a rigor. Having per-

severed in the same treatment a few days longer, and all the bad symptoms having apparently subsided, I thought it advisable to diminish the quantity of the mixture to one dose daily. She soon, however, changed for the worse, the bad symptoms threatened to return, and I found it necessary again to direct the medicine three times a day. This I continued till all danger of relapse seemed over; and on the 3d April her convalescence was complete.

It may be of importance to mention here a few observations relative to another remedy, the utility of which is fully established in the treatment of intermittent fever.

Towards the end of the month of January, 1827, intermittent fever began to make its appearance, and what may be considered remarkable, the Epidemic in many cases assumed a decidedly remittent form. When ague first attracted my attention, I was induced to consider all those cases where the patients complained of periodical shivering, as examples of that disease. Preparations of bark and sulphate of quinine were therefore prescribed as usual in such cases. It was soon observed, however, that some patients recovered quickly under this treatment, while in others the disease became aggravated into a violent continued fever. It therefore became necessary to make a very strict investigation

before any case could be decided as intermittent fever, or be put under the treatment appropriate to that disease.

During this Epidemic a few cases occurred to my observation where the eyes became affected in patients who had suffered repeated relapses ; but I have been informed by medical friends, that such an occurrence was not uncommon amongst people who had been some time discharged from the hospitals. The first stage of this affection appeared to be seated in the internal parts of the eye, attended with pain, irregularity of pupil, and dimness of vision. After this stage had continued for some days, the external tissues of the eye, and parts surrounding the orbit, participated in the disease, and exhibited the appearance of diffused inflammation. On my first noticing this affection of the eyes as a sequela of fever, I was informed by Mr. Wallace of this city, that in some cases of a similar nature which came under his treatment, he had found small doses of Peruvian bark the most efficacious remedy.* I therefore immediately adopted his suggestions, and with ultimate success, in all the cases which came under my care. There were two patients with this form of disease, to whom I gave preparations of bark, after a few days the ophthalmia certainly dis-

* I believe this gentleman was the first who prescribed preparations of bark in such cases, and I understand he intends to give some account of his observations to the public.

appeared, but they had a relapse of fever in an aggravated form.

I shall conclude this paper with the following examples of the efficacy of hydrochloruret of lime as a remedy in dysentery.

John Coyne was admitted into the hospital in the last stage of dysentery, which came on after a tedious fever. The discharges consisted of a bloody sanies, intermixed with a dark-coloured matter, the smell of which was quite overpowering and offensive. The stools were passed involuntarily, and the patient was reduced to an idiotic state. I considered that erosion of the intestines had taken place, so that his death was inevitable. I directed ten grains of the hydrochloruret of lime to be added to the common enema of the pharmacopœia, and to be administered to the patient night and morning. The stench which was so intolerable was soon corrected, the evacuations became more natural in appearance, and pure blood was sometimes discharged. His tongue became clean, and grew moist, but exhaustion continued to increase; notwithstanding which, he survived a fortnight after his admission.

I directed similar injections for Rose Macnamara, who was labouring under dysentery after

fever in the female convalescent ward. On the 11th of November, 1826, the stench from the incessant discharges from her bowels was so intolerable that the other patients declared they could not continue in the ward. The pain she suffered was at times excruciating. The first day after the injections with the hydrochloruret were employed, the patient experienced considerable relief of all the symptoms. In a few days the foetor was corrected. The progress of the cure was gradual and steady, and she was discharged well on the 6th December; she has continued perfectly well to the present moment.

James Heron, a very old man, and apparently of a broken down constitution, was admitted on the 22d March, affected with dysentery. He had frequent evacuations, occasionally mixed with blood, and attended with great pain in the abdomen. Tongue extremely loaded; urgent thirst; great debility; some appetite. He became convalescent from a tedious and severe fever on the 20th February. The dysenteric symptoms came on soon afterwards, and progressively increased up to the present time. I directed a mixture with acetate of ammonia and camphorated tincture of opium, but not finding any relief from this treatment, I directed on the 24th a mixture, consisting of ten grains of the hydrochloruret of lime, with two drachms of tincture of columbo, in four ounces of water and two drachms of syrup, half an ounce to be taken every hour.

25th. His tongue began to get moist, though still loaded with brown fur. Perstet.

26th. Tongue cleansing; evacuations changing to a more natural appearance. He has not occasion to go to the chair more than eight or ten times in the twenty-four hours; longer intervals from pain, but at times he thinks it more severe than before. Perstet.

27th. Feels better in all respects. Tongue cleansing. Let him take his mixture only every third hour.

28th. No pain since last visit. Was up but four times. Evacuations nearly natural; says he feels himself almost well. Let him take his mixture only night and morning.

29th. Convalescent.

31st. Discharged cured, and he says he has not felt himself so well in health for many years.

William Carl, admitted on 31st March, affected with dysentery upwards of three weeks. Complains of severe pain in his bowels; incessant alvine evacuations of thin foetid matter, intermixed with a quantity of bloody sanies; great emaciation and debility; some appetite. No rest at night, owing

to the constant necessity of relieving his bowels from their morbid contents. Some swelling of the abdomen, and his legs œdematous. Had been upwards of six weeks in Sir Patrick Dun's Hospital under treatment for dropsy. Had been tapped once while in that hospital, and a vast quantity of water he says was drawn off. His present disease commenced about a week after having been discharged from Sir Patrick Dun's.

On 2d April commenced regular treatment with hydrochloruret of lime. During the first two days from his admission, I considered it necessary to give him medicine, so as to bring him into a proper state to employ this substance with effect. I now directed ten grains of the hydrochloruret of lime to be dissolved in four ounces of diluted syrup, to which were added twenty drops of essential oil of caraway ; half an ounce to be taken every hour.

5th April. Continued the medicine as directed on 2d ; feels in general rather better ; some evacuations from his bowels, now not tinged with blood.

7th. No blood since yesterday. Pains in abdomen very slight, and seldom. Perstet.

9th. Still mending in all respects. Swelling of limbs subsided. Let him take his medicine only three times a day.

11th. Mending in every respect. Countenance filling up. Stools now slimy, without pain or uneasiness. Let him take the mixture only night and morning.

12th. At stool but six times last twenty-four hours. Evacuations thin and whitish. No pain. No blood passed. Countenance much improved. Strength returning. Tongue moist with white mucous covering. He has now his clothes on, and is able to walk.

I have selected these cases of dysentery from a number of others, as being the most distinctly marked examples of the disease. Such cases would, in all probability, have proved fatal under any treatment which has heretofore been adopted in a disease which is, in such advanced stages, so generally intractable.

It may be necessary to state that the substance known in the shops under the name of hydrochloruret of lime, is extremely variable as to the quantity of the soluble salt it contains. When first I employed this substance as a medicine, I prescribed the supposed necessary quantity of the dry substance. I soon observed, however, that the operation of the medicine appeared extremely irregular; I was therefore induced to examine the substance by some test which would give an indication of the quantity

which was capable of being dissolved in water. As it was known that this substance has the property of discharging the colour of indigo when dissolved in sulphuric acid, I directed three grains of indigo to be dissolved in three drachms of sulphuric acid, to which were added three ounces of water. This I reserved as a standard of comparison. Three ounces of dry chloruret of lime having been put into a pint of water, the mixture was occasionally stirred for twenty-four hours, and then filtered through paper. The strength of this liquid was ascertained by the number of drops required to discharge the colour of twenty-five drops of the indigo solution. I observed that the strength of the liquid varied from nine to twelve. It was therefore directed that each quantity of the solution, on being filtered, should be marked so as to indicate the strength, or the number of drops capable of discharging the colour from twenty-five of the indigo solution.

The foregoing cases have been selected from a great number, as being those in which the evidences of the efficacy of the hydrochloruret of lime were most unequivocal. From attentive observation relative to the mode of action of this remedy, I am induced to consider it astringent in its primary local action, without apparently exciting inflammation. In certain stages of dysentery, therefore, it will be found of the highest importance. The cases of Rose Macnamara and Heron evince its powerful efficacy

in that stage of the disease which has been heretofore so tedious and intractable. As to its secondary influence, it seems to produce very general effects upon the functions of the ganglionic system, principally evident in correcting the formation of morbid matter. In some cases it appears to act as a diuretic. The urine, however, when increased in quantity under its influence, appears to be of that kind which was formerly supposed to indicate a termination of disease, thus agreeing in its effect with the observation of Hippocrates, "*cocta non cruda sunt evacuanda.*" More frequently perspiration seems to be its most evident effect. In such case also the same observation is fully applicable, as the perspiration is seldom profuse, but always of that healthy feel, which has been usually considered by the physician as the most satisfactory solution of a severe disease.

From the observations I have made of the efficacy of this medicine, in cases which exhibited all the symptoms of that severe disease which medical writers have denominated yellow fever, I can with some confidence recommend it as a valuable remedy. Indeed the cases to which I at present allude, having had all the symptoms of that formidable disease, which the difference of climate in these countries could admit, I am induced to expect, that when properly employed, the hydrochloruret of lime will be found as valuable a remedy in the treat-

ment of yellow fever, as mercury has proved in syphilitic disorders.

When a remedy has been found very efficacious in some states of disease, the practitioner, by not carefully observing its operation in the animal economy, is induced to appropriate the medicine rather to the name of the disease, as known to nosologists, than to the morbid actions which the remedy is peculiarly adapted to correct.

The practitioner, therefore, should be careful not to expect too much from any single remedy, for the records of medicine show how many substances have been at times lost to the physician, and at other periods proving of the highest value in the science of medicine.

CLINICAL OBSERVATIONS
ON
PHTHISIS PULMONALIS.

BY WILLIAM STOKES, M. D.,

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PARK-STREET.

Read April 2, 1827.

IN the following pages I merely intend to bring forward certain cases of this disease, more with the hope of corroborating the observations of others, than of establishing any thing very novel as to the obscure nature of this affection. But having had great opportunities of witnessing many cases of Phthisis, of which I have endeavoured to keep a pretty accurate record, I entertain the hope that the present attempt may not be wholly useless to the pathological inquirer.

The term Phthisis is one, which I regret to say, is (at least in this country) too often used without

an accurate idea of its nature. Laennec restricted it wholly to that disease caused by the development of tubercles in the lungs, and it would be well if other physicians would follow his example. Nothing tends more to introduce error, than not attaching to the name of any affection some definite meaning; and hence I wish it to be understood, that in this paper the term Phthisis is solely confined to the tubercular disease of the lungs.

This disease, though very frequent in Dublin, has since the commencement of the present epidemic fever, been more than usually frequent. In fact we observed at the Meath Hospital that the disease commonly appeared after the termination of fever in those patients who might be considered as predisposed to it. In cases where the fever was accompanied by catarrh, this event was not at all uncommon; and in some of those cases where there was fever, catarrh, and dysentery, together, the development and suppuration of the tubercles were exceedingly rapid, the catarrh imperceptibly passing into true Phthisis, and the dysentery into that form of diarrhoea so common in cases of Phthisis. The progress of the disease was often astonishingly rapid. I have seen cases in which scarcely any pulmonary symptoms existed before the occurrence of fever, where death, from suppuration of tubercles in the lung, took place so soon as eight days from the crisis; and on dissection the lungs were found every

where penetrated by anfractuous cavities of recent formation. In some cases death occurred before any suppuration of tubercles took place, the symptoms being those of the highest inflammatory fever. These instances however were rare ; but as the affection may be considered as *Acute Phthisis*, I shall commence by a case of it.

CASE I.

GENERAL DEVELOPMENT OF TUBERCLES IN THE ABDOMINAL AND THORACIC VISCERA.

Margaret Rourke, aged 16, was admitted on the 9th of February, 1827, labouring under the usual symptoms of gastric fever. She was treated by leeching the epigastrium, and a strict adherence to the antiphlogistic regimen. On the 13th she was convalescent, and was so well as to be able to walk about. In two days she began to complain of cough, and on the 16th was found again labouring under high fever, the symptoms being tumefaction and tenderness of the abdomen, with strong pulse, and some purging. The epigastrium was freely leeches, and she took calomel and opium. The symptoms were somewhat relieved, but the cough continued, and on the 22d the stethoscope indicated general bronchitis ; the symptoms increased in severity, and on the 26th the sonorous rale was replaced by a distinct muco-crepitus, particularly over the right lung. From this date till the 4th of

March her illness daily increased: the thoracic symptoms became more severe; the respiration was hurried; constant cough; dilatation of the nares at each inspiration; great tenderness of the epigastrium; tongue moist, but dark-coloured; decubitus on the back, with the knees drawn upward; great heat of skin; constant thirst; delirium; involuntary stools. Death took place on the evening of the 4th.

The chest, examined by percussion previous to the fatal termination of the case, sounded rather dull, and the muco-crepitus was every where audible, mixed with a loud, sonorous rale.

DISSECTION.

Sixteen hours after Death.

But little emaciation.

Brain.—The substance appeared more vascular than usual, a little serum in the ventricles, and a considerable quantity at the base of the brain.

Thorax.—The lungs, on opening the chest, scarcely collapsed; no adhesions were observed, except at the postero-superior portion of the right lung, which felt rather solid, yet was every where crepitating. The entire of this lung was studded (in the closest manner) with minute white granular

tubercles. Examined with a microscope these appeared in several stages of development,—some were transparent, like minute vesicles; others presented a whitish point in the centre; while the greater number were solid and white. A few were more solid at their circumference than in the centre, giving them the appearance of little cysts. These occurred chiefly in the superior portions; while in the inferior they were not only much fewer, but also more transparent. Here the pulmonary tissue appeared in the state of “*engouement*.” The left lung was in its superior portion almost solid from the small white tubercles; it still however crepitated under the hand. The inferior lobe in the same state. The pulmonary tissue between the tubercles, was of a deep red colour; but on account of the vast number of these bodies it was next to impossible to investigate its state with any degree of accuracy.

The bronchial membrane was exceedingly vascular, and the air passages filled with red and frothy mucus.

The heart presented nothing remarkable.

Abdomen.—The liver contained many white opaque tubercles, both on its surface, where they could be seen through the peritoneal covering, and also in its substance, which was soft, and of a greyish

colour. By means of the microscope a vast number of minute tubercles in various stages, from that of transparency to solidity, could be detected in the parenchyma of this organ. Their appearance was in every respect exactly similar to those found in the lung. The spleen was large, adhering to the stomach and diaphragm, covered and filled with yellowish white tubercles, which were very soft in their centres, capable of being detached from the substance of the spleen by the slightest force, and leaving a clean hollow depression. With the microscope many minute transparent tubercles, some of them solid in the centre, were easily seen. The kidneys, pancreas, and uterus, were much in the same state, only that the number of tubercles in these organs was much less. The intestinal tube appeared healthy, except at the ileo-cæcal portion, where the mucous membrane was soft, slightly vascular, and presented a few enlarged muciparous glands.

In many points of view I consider this as a case of considerable importance. We here see an example of sudden, and generally speaking, simultaneous development of tubercles in almost every one of the organs of the body, occurring after fever, and proving fatal in seventeen days; the symptoms being those of high catarrhal and gastric fever. It was of the latter indeed that she chiefly complained. The

circumstance of the chest becoming generally dull, while the stethoscope showed that it was still every where pervious, made me suspect that there was a general development of tubercle in the lung ; and this suspicion I mentioned to my clinical clerk, Mr. Hogan, the day before her death. From her other symptoms I concluded that there was intense inflammation of the mucous membrane of the digestive tube ; but here, as the dissection proved, I was in error, that tissue being almost every where perfectly healthy. This I look upon as a most interesting fact, for to what are we to attribute the violent gastric symptoms but to the irritation in the solid organs, either the cause or the consequence of the growth of tubercle.

I do not mean to aver that no tubercle pre-existed in this girl. On the contrary, I am of opinion, that the larger yellow tubercles in the spleen and liver were the product of some former affection ; but I do conceive that those in the lungs, and the minute vesicular tubercles in the abdominal organs, were produced during the illness which terminated her life.

In another point of view this case is highly important, as it appears to add strength to the very probable supposition that the nature of tubercles in the substance of the pulmonary and abdominal organs is essentially the same. Here we see them

exactly agreeing in appearance, produced at the same time, and exciting great irritation both in the thoracic and abdominal viscera.* Even in this violent case we see the development of the tubercle in the lungs following its usual course, viz. of being most evident in the superior portions of the pulmonary organs, which presented a greater quantity of these bodies, and in a higher state of development, than was found in the other portions.

CASE II.

CATARRHAL FEVER TERMINATING IN PHTHISIS.

George Byrne, ætat. 20, blue eyes, light brown hair, fair complexion. Was admitted on the 1st of June, 1827, into the fever wards of the Meath Hospital, labouring under the symptoms of catarrhal fever, and presenting the stethoscopic phenomena of this affection. He stated that about a year ago he contracted a cold, for which he used mild remedies. Within the last three months he had some hæmoptysis occurring at intervals; and about six weeks before his admission threw up a considerable quantity of blood. He further stated that several of his family had died of decline. In a fortnight after his admission he was removed to the convalescent ward; here I first saw him. He complained of cough, with difficulty of breathing, drowsiness,

* See Laennec and Andral.

tenderness, and dragging pain in the right hypochondrium. Pulse, in the recumbent position, 104. Appetite good, and bowels regular. He complained of sore throat, and upon examination we found the pharynx of a light scarlet colour, streaked with lines of a deeper hue. Upon percussion the chest sounded clear, and the respiratory murmur was every where audible, except under the right clavicle, and in the mammary and axillary regions on this side. In the first of these situations it was masked by a distinct muco-crepitus, and in the two latter by the sonorous rale.

Connecting the stethoscopic phenomena with the general symptoms and history of the case, I made the diagnosis of commencing phthisis affecting the superior portion of the right lung.

On the 16th I found that both clavicles sounded rather dull, and that the muco-crepitating rale was audible in both sub-clavicular regions.

Infus. Digitalis \mathfrak{z} ss. bis in die. Cucurbit. cruent. inter scapulas.

On the 17th the rale had disappeared from the right side, leaving the murmur nearly natural, but rather weak. In the left however it continued, and was to be heard in the supra-spinal region. Upon making a deep inspiration a slight sonorous rale could be detected over the right lung.

On the 18th the muco-crepitus could again be heard under both clavicles, and over both scapulæ ; his respiration was more hurried, and the fever high.

19th. The right side sounded dull, and he complained of a severe stitch in this side. Muco-crepitating rale all over this lung.

Next day the stethoscope indicated the pure crepitating rale over the whole right lung, and in the superior portion of the left. His distress was severe : the face was flushed ; the cough constant ; great anxiety ; he was unable to turn in the bed. From this date to the 24th the symptoms continued the same ; he then had shooting pain in the left side, and the stethoscope indicated general inflammation of its anterior portion. Nothing appeared to check the disease in the least degree ; the pulse kept up to 136 ; the respirations 44 in the minute. He had copious sweatings ; and for four days previous to his death, was in a state of high delirium. By the stethoscope, for a few days previous to the fatal termination, I found the rale under both clavicles, particularly the right, to take on the large mucous character ; in every other portion of the chest it was the pure crepitus.

He died on the 3rd of July.

DISSECTION,

Seventeen hours after Death.

Slight emaciation.

Brain.—This organ presented nothing remarkable, being to all appearance perfectly healthy.

Thorax.—Some adhesions at the superior portions of both lungs. On the lateral surface of the right lung there was a band of about three inches in length, consisting of semi-organized lymph. The lung was only divided into two lobes: in the superior portion we found a small anfractuous cavity, lined with the usual membranes; and posteriorly a depression was observed, in the centre of which the pleura appeared thick and semi-cartilaginous, presenting diverging rays in every direction. Immediately under this depression was a small cavity lined with a soft and flocculent membrane. The remaining portion of this lung was filled with granular tubercles, many of them suppurated in the centre; the intervening pulmonary tissue was red, soft, but not completely solid. In the superior portion of the left lung a small cavity was found; the whole of the upper lobe was filled with granular tubercles; the inferior lobe nearly solid, of a reddish grey colour, and containing many isolated tubercles.

The bronchial membrane was red, but firm, and not ulcerated.

The heart of natural size, the parietes of the left ventricle appearing thicker than natural. Some white patches on the pericardium.

Abdomen.—The liver consisting of one lobe, and exceedingly small; its substance red, firm, and lobulated. The mucous membrane of the stomach presented reddish dots, but was firm, and not thickened. About the cardiac orifice a quantity of lymph was found deposited in striæ of an inch long; these striæ extended about two inches upwards upon the mucous membrane of the œsophagus, which was of a bright red colour. Throughout the course of the small intestines several reddish patches were observed; but there was no ulceration or softening of the mucous membrane. In the colon we observed some softening of the lining membrane, but no other mark of disease.

From the supervention of acute pulmonary inflammation in this case, I was induced to try whether the exhibition of the tartar emetic in large doses, as used by the continental physicians, would prove as beneficial in reducing this form of inflammation as I have so often seen it do in cases of pure pneumonia. In this case it certainly had a fair trial. Between the 20th and 24th of June he took twenty-four

grains of this substance, but intolerance of the medicine supervened on this day, and I had to discontinue its use. I rather fear, that in the secondary pneumonia of phthisis, this medicine will not be found so applicable as in cases of the simple disease; from this circumstance, that the stomach and intestines are so frequently engaged. In this instance there was distinct œsophagitis, and the irritation was prolonged into the stomach. When we consider also, that the successive development of tubercles will reproduce the pulmonary inflammation again and again, we shall have another reason for explaining why this remedy has not its usual efficacy when used in the pneumonia of phthisis.

In the course of this paper I shall detail other instances of the exhibition of this remedy in cases of pulmonary consumption.

In this case there was no diarrhœa, and we accordingly found the mucous membrane of the intestines scarcely, if at all engaged. My colleague, Dr. Graves, and I, have constantly had occasion to verify the remark, that the diarrhœa of Phthisis is caused by an inflammatory ulceration of the mucous membrane lining the digestive tube, the seat of which seems to be primarily in the muciparous glands. I have seen a case of Phthisis where the patient had an excellent appetite to the hour of his death, and actually died after partaking of a large breakfast.

His stools throughout were natural and solid ; and on dissection the intestinal canal was found perfectly healthy.

The state of the heart in all these cases, of what we may term *Acute Phthisis*, differs remarkably from that which is so commonly observed in long continued cases of the disease. In the latter instances, as far as my observations of a great number of cases have gone, it is always remarkably small, flaccid, and softened. This appears at first sight contrary to what we should expect, considering the great pulmonary obstruction which must be supposed to exist, and also the high degree of increased action under which the heart labours in the progress of the disease. This action is frequently so violent, as to simulate disease of the heart.* I have seen it so strong, as to cause a vibration at each pulsation, of the bed on which the patient lay, and all this, as dissection proved, without thickening or enlargement of the heart. But when we recollect the very exsanguineous state of these patients, the difficulty arising from the consideration of the pulmonary obstruction subsides in a great measure ; and we may also suppose that the heart undergoes emaciation in common with the general muscular system.

* An excellent instance of this is recorded by my friend, Dr. Townsend, in his paper in this Volume.

In these cases of rapidly fatal Phthisis, the heart is seldom changed from its natural appearance. It is sometimes a little softer than usual, but not diminished in size, and its state in every respect is similar to that of the other muscles of the body.

In every case of this description that I have seen the patients suffered severely from the commencement of the secondary febrile symptoms, and died in great agony. This is what we should expect, on account of the pulmonary obstruction taking place so rapidly. On this subject M. Broussais, in his *Histoire des Phlegmasies Chroniques*, where he describes the fatal termination of many cases of pneumonia, says: “La mort a été violente parce que
“ l’induration faisait de rapides progres. *On verra*
“ *constamment une angoisse inexprimable chez les*
“ *malades dont les poumons deviendront en peu de*
“ *temps imperméables à l’air sans que la quantité des*
“ *fluides et le besoin de respirer diminuent avec une*
“ *egale rapidité.*”—Vol. I. p. 82.

There is another circumstance partly illustrated in this case, which I consider worthy of remark, as I think it adds to our means of diagnosing the tubercular affection of the lung. It will be seen, by reference to the case, that on the 17th the mucocrepitating rale had disappeared from the right subclavicular region, but that on the next day it had returned. I have seen several cases where this

alternating disappearance and return of the rale in the same situation was very remarkable ; and in one case, which I shall give in the course of this paper, it led me to prognosticate the growth of tubercle with much more certainty than I otherwise should have done.

CASE III.

PHTHISIS RAPIDLY SUPERVENING AFTER CATARRHAL FEVER.

B. G., a woman aged about 26, of a lymphatic temperament, was admitted into the fever sheds soon after their erection. She stated, that for a few weeks previous to the rigor which ushered in her fever, she had been teased by a short, dry cough. On admission she laboured under symptoms of the common catarrhal fever. The chest sounded clear, but the stethoscope indicated a general, though mild bronchitis. In about six days her fever subsided ; but I remarked in going round the ward, that she expressed no wish to get up. In a few days, not exceeding four or five, she complained of some shortness of breathing. I then examined her carefully, and found that a well-marked hectic was established ; the chest sounded rather dull on percussion, especially in the superior portions, where a sonoro-mucous rale was audible. I examined her daily during the following week, and found the rale to become first the mucous, and afterwards to pass

into gurgling, which extended over the whole right lung, and the superior portion of the left. She died on the seventh day after my second examination. Dissection was not allowed, but from the stethoscopic signs, no doubt could be entertained as to the state of the case.

It might be objected to my view of this case, that in fact the fever was that caused by the development of tubercles; but from its history and the comparison between it and others of a similar description, I incline to the belief, that the fever under which she laboured in the first instance, was the common contagious fever, and that the rapid development of the tubercles in her pre-disposed constitution, was brought about by its malignant influence.

I might adduce many more cases of a similar description, but as they agree in most particulars with the preceding instance, I shall refrain from so doing. In one instance, where death followed in a few days after the subsidence of the primary fever, and where the fatal termination was preceded by all the symptoms of sudden and general tubercular development in the lung, I am inclined to believe that this disorganization of the pulmonary organs was intimately connected with the formation of an extensive and deep-seated abscess in the neck, which

occurred immediately after the crisis of the primary fever.

I regret that an opportunity of verifying the diagnosis could not be had, but from the exact similarity, both as to symptoms and stethoscopic phenomena, between this case and that of Mary Rourke, I have no doubt on my mind that an extensive crop of tubercles had been rapidly developed in both lungs,* and probably also in the abdominal viscera.

CASE IV.

PHTHISIS OF BOTH LUNGS, WITH EXTENSIVE INTESTINAL
ULCERATION, PRODUCING FATAL HÆMORRHAGE FROM
THE BOWELS.

Wm. Byrne, ætat 38, spare habit, was admitted into the Meath Hospital on the 22d of June, 1827, labouring under a hard and very sonorous cough, with scanty expectoration, to which, he stated, he had been subject for the last four years. During this time he had frequently passed large quantities of the tape-worm, was afflicted with capricious appetite, occasional gnawing pains of the abdomen, and hæmatemesis; of which last affection he had a distinct attack three weeks previous to his admission. Some emaciation; decubitus on the right side; pulse

* See M. Velpeau's Paper on Internal Disease after surgical operations.—JOHNSON'S JOURNAL, No. 12.

96; respiration 34; expectoration very scanty, and not puriform. The cough was troublesome in the mornings and evenings. Slight tenderness in the right hypochondrium.

Percussion.—The whole chest sounded rather dull, particularly on the clavicular regions.

Stethoscope.—A feeble, but perfectly pure respiratory murmur could be heard all over the chest. Strong bronchophonia in the postero-superior portion of the left lung.

In consequence of these observations I concluded that the first cause of the cough was the presence of worms in the intestines. It was also plain that there was some solidity of the pulmonary organs, and the circumstance of this solidity being most apparent in the superior portions of the lung, and no where so complete as to destroy the permeability of this viscus, made me make the diagnosis of an extensive crop of tubercles, which had not as yet suppurated, or excited much pulmonary irritation. I confess that I made this diagnosis with no great certainty, and waited with some anxiety for the further development of symptoms which would lead to a less doubtful opinion. In the mean time small doses of mild anthelmintics were ordered, which brought off several fragments

of the tape-worm, and to a certain degree relieved the cough, without exciting intestinal irritation. Their use was persevered in but for three days, and he was then left without any medicine but some soothing pectoral mixture. No change was observed until the 2d of July, when he complained of some diarrhœa, and increase of cough. The epigastrium was tender, and the pulse more accelerated. I now found the left side of the chest to have become more dull on percussion, and on applying the stethoscope I detected a very minute crepitating rale over the mammary region. Over the remainder of the chest the respiration was heard as on the first observation.

Hirud. vij. epigast. Hanst. Anod. Vesp.

3rd. The crepitus has almost entirely disappeared, leaving the murmur of respiration nearly as before. Tenderness of the epigastrium, and tendency to diarrhœa much less. He passed some more of the tape-worm.

Mist. Pect.

4th. Crepitus has returned in the left mammary region; some can also be heard in the subclavicular portion of this side.

Vesicat. lat. sinist.

5th. The blister rose well, and the crepitating

rale is again greatly diminished, with return of the respiratory murmur.

He continued without any considerable alteration until the 17th, when I found him labouring under high fever, his respiration more hurried, and his cough increased. A very distinct crepitus could be heard from the left mammary region downwards.

Venesect. ad 3x. Tart. Antim. gr. vj. more solito.

18th. The crepitus has disappeared, and in its place there is a slight mucous rale. He feels greatly relieved. The cough is diminished, and the pulse much reduced.

On the 19th he had some nausea; on the 20th diarrhœa set in, and I found him next day in a state of high febrile excitement. He had constant cough, vomiting, great heat of skin, tenderness of the epigastrium, and diarrhœa.

Stethoscope.—Mucous rale over the whole anterior part of left lung, strong bronchophonia in the subclavicular region.

From this day his distress increased; he had hiccup, vomiting, high and hurried respiration, suppression of expectoration, pain of the side, diarrhœa, strong action of the heart, anxiety and delirium;

the stethoscopic signs being those of increasing solidity of both lungs, with bronchitis, and some tubercular softening in the superior portions.

On the 27th, while at stool, he suddenly passed about two quarts and a half of fluid blood, and immediately sunk.

DISSECTION,

Twelve hours after Death.

Head.—Not examined.

Thorax.—Right lung adhering superiorly ; about a pint of reddish serum in the cavity of the pleura. The superior lobe is nearly solid from granular tubercles, of which a few have suppurated towards the summit, and formed two minute abscesses. The intervening pulmonary tissue is grey, semitransparent, and homogeneous. The middle lobe in the same state. A few large tuberculous masses in the lower lobe, its pulmonary tissue being in the state of simple sanguineous engorgement.

Left lung.—A small, but very anfractuous cavity in the superior portion. The remainder of the lung filled with granular tubercles. In the portion corresponding to the mammary region I found a cavity, which upon examination proved to be a dilated

bronchial tube ; it was lined with a plastic mucus, which being removed, we were enabled to see the membrane. Many of the bronchial tubes in this lung were dilated, being as wide at their termination as at their commencement.

The heart was rather small ; the parietes of the right ventricle were thin ; those of the left thick, with diminution of its capacity. Some cartilaginous depositions on the mitral valve.

Abdomen.—The liver large, pale, and hardened. Upon the anterior face of the left lobe we found a stellated depression, about two inches deep, over which the surface of the liver arose in crests ; the base was formed by a white cartilaginous mass, which extended by two prolongations into the substance of the viscus. The mucous membrane of the stomach thick, soft, and pulpy. In the duodenum many enlarged muciparous glands. The jejunum presented a vast number of circular ulcerations with raised edges, but in the ileum they were not so numerous. In the ileo-cæcal portion we found many old cicatrizations.—The state of the colon was remarkable,* its ascending portion thickly studded with enlarged glands, and presenting a vast number of ulcerations, between which the mucous membrane was raised and thickened. The

* It was filled with blood.

transverse portion appeared healthy, but in the commencement of the sigmoid flexure there was a large patch of apparently recent ulceration, extending completely round the intestine. On each side of this patch the mucous membrane had the ecchymosed appearance observed in the stomach in cases of hæmatemesis. The spleen large and soft. Kidneys healthy.

I would not have given this case at such length were it not that it shows the character under which the crepitating rale sometimes develops itself in cases of Phthisis. I have now so often observed this recurrent crepitus that I look upon it as an excellent diagnostic in many obscure cases of Phthisis; and in this one, although the place of its first appearance was not in the superior portion of the lung, still it satisfied me more completely than any thing else at the time that the case was in reality one of genuine Phthisis. To explain its occurrence, we may suppose that it arises from the successive development of crops of tubercles, each of which in its turn excites a fresh pulmonary irritation. One circumstance is worthy of remark, and it is this, that the local irritation is never completely subdued. The crepitus may disappear, but there is in its place some mucous rale; or it may become greatly diminished in intensity,

yet still leave a trace of the phenomenon behind. This crepitating rale differs from that observed in cases of pure pneumonia in the alternate appearance and disappearance of the phenomenon in the same situation. The part also becomes gradually duller on percussion. It might be objected to the idea of its arising from the successive development of crops of tubercles, that we could hardly suppose so important a change to take place in so short a time as twenty-four hours; but when we find such cases as that of Margaret Rourke, and also recollect that tubercle may pass through all its stages with great rapidity, this objection becomes weakened, at least to a certain degree.

In this case also, although there can be no doubt but that considerable pulmonary obstruction had existed for some time, yet the heart was not found at all enlarged. The state of the left ventricle I look upon as not produced by disease. When we recollect the difference of thickness of the two cavities, it is not unreasonable to suppose that we might often meet the left ventricle apparently in the state of concentric hypertrophy,* from the circumstance of its remaining for some time in the state of contraction produced by its last effort.

With respect to the state of the mitral valve, I

* See Bertin.

have only to remark, that as far as my dissections have gone, they have convinced me that valvular disease is rare in phthisical patients. Upon examining my notes I find but two cases, out of a great number, in which I observed disease of the valves. The first is the case which I have just recorded, and the second that of a girl who died after a long illness, and in whose heart I found the mitral valve almost completely ossified. In the latter instance there appeared to be a disposition to the formation of bony matter, for I found many calculi in the substance of the lung, and also one of the bronchial glands full of earthy matter.

There can be no doubt but that the life of this patient was cut short by the sudden hæmorrhage into the colon. I am not aware of any case of Phthisis on record which has terminated in this manner, and bring this forward as one which should lead us to adopt a different line of practice in the diarrhoea of Phthisis from that which is usually pursued. We should endeavour to reduce the inflammatory action of the mucous membrane and its subjacent glands, and thus curb the tendency to ulceration, in place of giving the usual medicines, viz. opiates and astringents so indiscriminately, which I have frequently seen to increase the fever, and hasten the fatal result.

CASE V.

PHTHISIS, WITH CHRONIC PNEUMONIA, SUPERVENING
UPON AN INJURY OF THE SIDE.

John Kavanagh, aged 45, admitted into the chronic wards of the Meath Hospital on the 26th of June, 1827. He was constantly in the enjoyment of good health until last January, with the exception of a syphilitic affection, contracted more than a year previously, for which he was treated in the usual manner. About the middle of January he was exposed to cold and wet, when he became affected with pain in the chest, cough, mucous expectoration, and dyspnœa. In the beginning of February, while following his occupation as a porter, he experienced a violent injury of the right side, by which three of his ribs were broken. This was immediately followed by an increase of the cough, and also of the difficulty of breathing. In about five weeks he was so far recovered as to be able to resume his occupation, when he met with another accident. A heavy weight fell on his shoulders, and bent him violently forward. He immediately perceived a severe stitch in the inferior sternal region; his cough became again increased, and continued until the day of his admission. He then presented the following symptoms. Some emaciation; cough not very severe, with an expectoration, consisting of

opaque, flocculent masses, floating in a transparent mucus ; respirations 32 in the minute ; pulse 120, small and weak ; tongue red, and moist. He complains much of the sensation of a ball in the throat. Has diarrhœa at irregular intervals. There is no tenderness of the epigastrium, but the right hypochondrium appears fuller than natural, and the liver can be felt enlarged and hardened.

Percussion.—Very slight dullness of the right side, both anteriorly and posteriorly.

Stethoscope.—Respiratory murmur pure, but somewhat feeble over the right side. Action of the heart can be heard over the shoulder on this side, and there is strong bronchophonia under the clavicle.

On the 28th I found that some mucous rale was distinctly audible in the right axillary region ; he was in high fever, with tenderness of the epigastrium, and diarrhœa. The next morning he experienced a violent rigor, which lasted for upwards of twenty minutes. I found him in the greatest distress, his respiration more hurried, the diarrhœa constant, the cough excessively harassing, and his whole appearance bespeaking the greatest agony. On applying the stethoscope I detected perfect cavernous respiration in a spot of about two inches diameter in the superior portion of the right mammary region, with

strong resonance of the voice, which did not however amount to perfect pectoriloquism.

30th. The cavernous respiration can be heard from the sub-clavicular to the lower part of the mammary region. On each inspiration there is an imperfect metallic tinkling; the cough is followed by a loud cavernous rale; muco-crepitus over the remaining portion of the lung, with increase of the dullness of sound on percussion. He expressed a desire to go to his home, where he died in about ten days.

DISSECTION.

Considerable emaciation. No infiltration of the external parts.

Head.—Not examined.

Thorax.—Strong adhesions of the right lung, which was found greatly indurated, and evidently containing a great quantity of the black pulmonary matter. A large abscess occupied the entire portion of the superior, and passed to the base of the middle lobe. It did not present the cartilaginous lining of a chronic phthisical abscess, its parietes being merely formed by the indurated pulmonary tissue. It was nearly full of an adhesive blackish fluid, which did not exhale any gangrenous fœtor.

Masses of tubercular matter of various sizes were thickly scattered through the lung, some of them beginning to soften in the centre. The intervening pulmonary tissue was hard, and of a reddish grey colour. The left lung presented some tubercles in its superior portion. The bronchial mucous membrane was of a deep red colour, and the air passages filled with a dark coloured mucus. Heart not enlarged, consistence soft.

Abdomen.—Mucous membrane of the stomach thick, red, and easily detached. Many circular ulcerations in the lower part of the ileum, and also in the colon. Liver hard, and somewhat enlarged.

This case is instructive, as affording an instance of Phthisis coming on after an injury of the side, and in a patient beyond the age when this disease is most frequent. The production of tubercle in this instance was in all probability preceded by pneumonia, and induced by the continued irritation of the lung. This supposition is rendered highly probable by the following considerations.

1st. That although a few tubercles were found in the left lung, yet that they were in much greater quantity, and in a more advanced stage in the right.

2nd. That the patient laboured under two distinct attacks, following each injury of the side, and superadded to his primary affection, the symptoms of each being those of pleuro-pneumonia, and not of Phthisis.

3rd. That evident marks of chronic inflammation of the pulmonary tissue were found in the right lung.

It might be supposed that the abscess of the right lung was not in reality a phthisical excavation, but was, in point of fact, a true pneumonic abscess. But when we compare the frequency of the two cases, and recollect that all around this abscess were large masses of tubercular matter, and lastly, that abscess from chronic pneumonia is rarely, if ever met with, we cannot, I think, suppose that the cavity was any other than a recently formed phthisical abscess. This will account for the absence of the semi-cartilaginous lining; and the colour of its contents may easily be explained, by recollecting that the lung contained a large quantity of the black pulmonary matter.

The rigor which this patient experienced on the morning of the 29th was evidently connected with the formation of the abscess. On that day the stethoscope showed that an excavation had taken place; and we are thus led to the knowledge of an

interesting fact, namely, that the softening of a large mass of tubercular matter in the lung may be ushered in by the same symptoms, which denote the formation of matter from common inflammation. It establishes, at least to a certain degree, some analogy between the progress of tubercle and the effects of inflammation on the different tissues of the body, and would make for Broussais' idea, that tubercle is in fact the product of inflammation.

I think it not improbable that the formation of tubercle in this man's lung arose from a predisposition, increased by the use of mercury, and called into action by the pulmonary irritation. I have frequently seen the use of mercury, in a predisposed habit, to bring on symptoms of Phthisis. But this is a fact familiar to every accurate observer. Nay, what is worse, I have known this mineral to be exhibited again and again for the cure of the same affection in a patient where every symptom of Phthisis had set in. In a female who came into the Meath Hospital, nine courses of mercury had been exhibited for the one affection in the space of fifteen months! The last two courses were given when symptoms of Phthisis had set in, and the woman left the hospital with a large excavation in the superior portion of the right lung. This fact speaks for itself.

CASE VI.

PHTHISIS, CAUSING A FISTULOUS OPENING INTO THE CAVITY OF THE LEFT PLEURA, FOLLOWED BY EMPYEMA AND PNEUMO-THORAX.

Catherine Murphy, æt. 25, a silk-weaver.—Several of her family have died of Phthisis. This patient was admitted into the Meath Hospital on the 30th of September, 1826, labouring under symptoms of commencing Phthisis. The menstrual discharge had ceased three months previously. When admitted the chest sounded well on percussion, and the murmur of respiration was every where natural, except at the superior portion of the left lung, where we could detect a slight sonoro-mucous rale. The action of the heart could be distinctly heard over the right side. Decubitus on this side. Her symptoms gradually increased, and the following is the report of the 22d of November. Cough increased, with muco-purulent expectoration, containing fragments of white caseous matter. Dyspnœa. Well marked hectic. On percussion the chest sounded clear, except on the clavicular regions, where the sound was rather dull. Crepitating rale in the superior portions of both lungs, particularly distinct in the right. Respiration puerile in the remaining portions.

Diagnosis.—Tubercles are forming in the superior portions of both lungs. Inflammation of the intervening pulmonary tissue.

Dec. 4th. Large mucous rale in the right sub-clavicular region, and over the whole of the left lung.

11th. Distinct bronchophonia in the superior portions of both lungs. Mucous rale continues.

She remained in hospital until the 26th of December, when she went out, and I heard nothing more of her till about the middle of February, 1827. At this time I was informed that her symptoms had suddenly become much more severe, which she attributed to the giving way of something within her chest. I immediately concluded that pneumothorax and empyema had taken place from the opening of a fistulous communication into the cavity of the pleura, but having unfortunately lost her direction, I did not see her at this time.

On the 27th of May her sister happening to come for advice among the externs of the hospital, I inquired of her what had become of our patient, when, to my surprise, I learned that she was still alive. I at once visited her, found that my conjecture was right, and had her removed to the hospital.

The following is the history of her case, as given by herself, from the date of her leaving the hospital. On the 20th of February, twenty-five days after her

dismissal, while in the act of coughing she had a sensation as of a sudden crack, extending from the shoulder downwards, and felt as if a quantity of liquid was shed out into the left side of the chest. Acute pain of the side immediately set in, with cessation of expectoration, and loss of voice. For some time previously she could only lie on the right side, but immediately after this occurrence she was obliged to turn to the left, any attempt at lying on the right side bringing on cough and increased oppression. The aphonia subsided in about eighteen hours, but the pain of the side continued for fourteen days, during which time (according to her account) she had neither cough nor expectoration, but lay in a state of great debility, and took no food. During this period the diarrhœa with which she had been affected, became less troublesome. She had some palpitation, and upon the cessation of the pain observed that her heart was pulsating at the right side of the sternum.

The following is the report of her state when admitted into the hospital. Great emaciation; irregular hectic; diarrhœa at times troublesome, at others she is costive. For the last sixteen weeks she has not sweated at night, but towards evening the palms of the hands become hot; skin cool; respirations 26 in the minute; pulse 120; tongue moist; anorexia; occasional singultus, and inclination to vomit. She is now able to lie for a short time on

the right side, but the attempt generally brings on cough, with scanty mucous expectoration. The cough has a hollow sound, and occurs in paroxysms something like pertussis. When she turns in her bed she perceives the fluctuation of a liquid, and feels that it changes its situation according to her position.

Upon using the hippocratic succussion a distinct fluctuation may be heard, even by those standing a good distance from the bedside. Percussion elicits a clear sound over the whole left side, except in the most inferior portion, where it is completely dull.

Stethoscope. Left lung.—The murmur of respiration can be feebly heard in the acromial, subclavicular, and supra-spinal regions; in the other portions of the side of the thorax it is inaudible. Upon making a deep inspiration an indistinct *bourdonnement*, followed by the *tintement metallique*, can be perceived posteriorly. In the præcordial region the impulse of the heart is not perceptible, but its sound is fully audible.

Right lung.—Puerile respiration; some gurgling generally in the superior portion, and great resonance of the voice. When the patient lay on the right side the *tintement* could no longer be heard over the left cavity of the thorax, and the dullness of sound on the side disappeared from the fluid fall-

ing towards the mediastinum. The impulse of the heart is felt strongly between the third and fourth ribs at their sternal terminations on the right side, and the sound of its contractions is here also clearly audible.

Diagnosis.—Phthisis affecting both lungs; pneumothorax and empyema of the left cavity of the pleura, arising from a fistulous communication between this sac and the bronchial tubes, compressing the lung upwards and backwards, and displacing the heart. The lung probably strongly adherent, and the pleura pulmonalis and costalis covered with coagulable lymph. Tubercular suppuration commencing in the superior portion of the right lung.*

She lingered till the 3rd of August with very little alteration of symptoms. During this time I could observe that some gurgling was now and then heard in the left acromial region, and that the resonance of the voice in the right subclavicular region became perfect pectoriloquism. The *bourdonnement amphorique* was never very well marked, but was always evident when the patient coughed, or made a strong inspiration.

Within a very few days of her death I made an

* This diagnosis I read at a meeting of the Association in June, 1827.

accurate observation, the result of which was, that the quantity of fluid in the left cavity of the thorax had hardly, if at all, increased.

DISSECTION.*

Twenty-four hours after Death.

Great emaciation.

On raising the sternum the left side of the thorax appeared to be occupied by a large cavity, containing upwards of a quart of an opake wheyish-looking fluid, which nearly concealed the lung. The remainder of the cavity (which indeed occupied nearly the whole of the left side) was empty. The trachea was then opened, and the nozzle of a bellows being inserted, air was forced in, and immediately seen to escape through the fluid in large bubbles, which appeared to arise from the superior portion of the cavity. The existence of a fistulous communication being thus established, we proceeded to remove the sero-purulent fluid, which had a slightly sharp, but not offensive odour. The lung was then found reduced to about one-fourth of its natural size, adhering posteriorly and superiorly, and feel-

* This dissection I performed in the presence of Drs. Graves, Cuming, Montgomery, Townsend, and Crawford; and also my surgical colleagues, Messrs. Macnamara, Collis, and Porter.

ing completely solid on its anterior surface. It was covered with a hard greyish false membrane, having a corrugated appearance. The whole of the internal surface of the pleura was covered with a coating of albuminous lymph, in some places fully two lines in thickness, and generally collected into roundish masses, giving the whole a knotted and irregular appearance. In the superior portion a circular orifice of about two lines in diameter was discovered, through which a probe passed at once into a cavity in the postero-superior portion of the lung. This had all the characters of a chronic tuberculous excavation; it could contain a pullet's egg, and communicated with the left bronchus by a large tube, the mucous membrane of which was covered with many circular and superficial ulcerations. The remaining portion of the lung was very solid, of a grey colour, and contained many crude tubercles.

Right lung.—Superior lobe crepitating, and filled with many granular tubercles, between which the pulmonary tissue to a certain degree is solidified. About two inches from the summit we remarked a stellated depression of the pleura pulmonalis, immediately below which a cavity capable of containing a walnut, was discovered, communicating freely with the bronchial tubes, presenting both the usual membranes of a phthisical cavity, and half filled with puriform and softened tuberculous matter. The

middle lobe presented many crude tubercles ; the inferior was nearly solid, of a greyish colour, and friable consistence.

Abdomen.—The mucous membrane of the stomach was soft, and easily detached. The pyloric extremity presented a deep red colour. At the superior termination of the duodenum there was considerable thickening of the mucous lining, but its consistence was not unnatural. Many circular ulcerations and enlarged muciparous glands were found through the entire course of the small intestines, the mucous membrane of which was every where softened. The colon covered with large circular ulcerations, its coats greatly thickened, and its mucous lining of a deep red colour. The omentum presented many white granulations. Liver much enlarged, and of a yellowish colour. Spleen, kidneys, and uterus apparently healthy.

At the meeting of the Association held in May, 1827, my friend, Dr. Townsend, read a most interesting case of pneumo-thorax, arising from the opening of a fistulous communication into the cavity of the pleura, which will appear in this volume. So accurate, and so completely verified by the dissection were his observations, that I should not have brought this case before the Association were it not that it differs from his in some particulars.

1st. As to the occurrence of the fistulous opening. In Dr. Townsend's patient the accident supervened without exciting at the time any suddenly distressing symptoms. In mine, on the contrary, the most severe symptoms set in on the instant of the fistulous communication taking place.

2dly. As to the duration of the case. Now although we cannot say with certainty when the opening took place in Dr. Townsend's case, still it is highly probable that the pneumo-thorax was not of long standing when the patient was first examined by the stethoscope. My patient lived five months and thirteen days from the time when the abscess opened into the pleural cavity, of which, I believe, there is no other instance in the records of medicine.

In these cases, where at each inspiration and expiration the air has free passage into and out of the pleural cavity, it appears to me that we must attribute the displacement of the heart to the pressure of the liquid effusion alone; for so long as the fistulous communication is freely open, we cannot suppose that there could be any notable increase of pressure from the accumulation of air. This idea is strengthened by a fact connected with this case, namely, that there was scarcely any dilatation of the

left side, the intercostal spaces being little, if at all, altered in appearance.

The quantity of liquid effusion was by no means sufficient to account for the great diminution of volume which we observed in the lung; to what then are we to attribute this circumstance? It would appear that the collapse of the lung is in fact produced by the admission of the air into the pleural cavity, and that it occurs at once, independently of any gradual accumulation in this sac; or in other words, that it is in fact an exemplification of what has been long known, that upon the admission of air to the surface of the lung, this viscus will collapse in a rapid and forcible manner. It might be supposed that the quantity of liquid had at first been greater, and by a process of absorption had been partly removed; but we know that in these cases of chronic pleurisy there is but little tendency to absorption; and further, that in the great majority of cases of secondary empyema and pneumo-thorax the quantity of liquid effusion increased rather than diminished.

It is not a little remarkable, that although we have here an instance of a suppurating surface of great extent being so long exposed to the contact of the external air, yet the puriform matter was found without any appearance of putrescency. To explain this it might be supposed that a continued

process of absorption and effusion was kept up; but this will only apply to the serous part of the liquid, for we know when lymph is effused upon a serous surface, that the efforts of nature are directed not to absorb, but rather to organize. Thus in a case of pleuro-pneumony, which has induced hepatisation of the pulmonary tissue, and in which a cure is effected, we find that the lymph thrown out in the parenchymatous structure is absorbed, while that effused upon the serous surface is organized, as if nature, being unable to remove it, converted it into a tissue in every respect similar to that with which it was in contact. The solution of the question is one of difficulty.

In this case it will be observed, that ulceration of the bronchial mucous membrane was only found in the air tube, directly leading to the cavity in the left lung. From a great number of dissections I have come to the conclusion, that in cases of phthisis we rarely meet with this aphthous ulceration of the bronchial mucous membrane; but in every case where I have observed it, the ulceration was always most evident in the tube immediately leading to a large cavity. Can we account for this by supposing that the ichorous discharge from the parietes of the excavation acts as a direct irritant on the membrane over which it passes. I have the notes of a dissection which appears to favour this idea. The

cavity was situated in the superior portion of the right lung, several bronchial tubes opened into it, and all of them presented the aphthous ulceration ; the right bronchus was also covered with them, and several were found in the lower part of the trachea ; but in the left lung, where no large excavation had been formed, I could not detect the slightest trace of bronchial ulceration, either in the principal bronchus, or smaller ramifications.

Before concluding this paper I think it will not be uninteresting to briefly state the conclusions which may be drawn from what has now been advanced.

1st. That the development of tubercles in a predisposed habit is greatly favoured by an attack of continued fever.

2nd. That in this manner death may supervene apparently from the irritation of the tubercles, even before they have gone on to suppuration.

3rd. That these cases are much more rapid in their course, and accompanied by more violent symptoms, than those of ordinary Phthisis.

4th. That when the extensive development of tubercle occurs simultaneously in the lungs, and the

parenchymatous organs of the abdomen, the symptoms are those of the highest degree of catarrhal and gastric fevers.

5th. That a patient labouring under such an affection may present most of the symptoms of violent inflammation of the stomach and intestines, without having these organs at all engaged.

6th. That tubercles of the abdominal parenchymatous organs are, to all external appearance, identical with those observed in the lungs.

7th. That the stethoscopic indications of the sudden and general development of tubercle in the lungs are those of violent bronchitis, with some pneumonia; the lung becoming, to a certain degree, dull on percussion, though still every where permeable.

8th. That in these instances the heart does not undergo that diminution in size and consistence so remarkable in the common cases of Phthisis.

9th. That in cases of Phthisis rapidly supervening after fever, general suppuration of the tubercles in the lung may take place in so short a time as seven days.

10th. That a recurrent crepitating rale in the

same situation, with gradual increase of dullness of sound on percussion, may be reckoned as an excellent diagnostic of the growth of tubercle.

11th. That disease of the valves of the heart rarely occurs in Phthisis.

12th. That in cases of Phthisis with intestinal ulceration, death may be occasioned by hæmorrhage from the bowels.

13th. That the softening of a mass of tubercular matter in the lungs may be accompanied by the symptoms indicative of the formation of a common abscess, from inflammation of any of the internal organs.

14th. That the aphthous ulceration of the bronchial mucous membrane, when it does occur, is generally met with in the air passages leading to a cavity of long standing.

15th. That a patient may live for upwards of five months after the opening of a fistulous communication from the lungs into the cavity of the pleura.

16th. That displacement of the heart in cases of empyema with pneumo-thorax, when the fistulous

communication remains open, must be attributed to the pressure of the liquid effusion alone.

17th. That the diminished size of the lung in such cases is probably owing to some other cause than mere mechanical pressure.

A
PATHOLOGICAL INQUIRY
- INTO THE
NATURE OF HYDROCEPHALUS,
GROUNDED ON AN ATTENTIVE OBSERVATION OF THE PHENOMENA,
AND OF THE APPEARANCES PRESENTED ON DISSECTION.

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THE following paper presents several cases and dissections of Hydrocephalus, with the history of the disease, founded on the cases. The ratio symptomatum and mode of treatment are principally deduced from the appearances after death. This I conceive to be the only plan by which we can arrive at certainty in medical investigation.

If we examine in what respect dissection has been, or can be still useful in elucidating the nature of Hydrocephalus, we shall find, that without dissection we could not have ascertained the nature of the morbid changes which take place, nor have accounted for the symptoms which characterize the

disease ; whereas, in the present state of our knowledge we can show the connexion of the morbid appearances with the symptoms of the disease, and thus arrive at a degree of precision in our diagnosis which, while it enables us to decide on what is going forward in the brain, tends to elevate medicine from the condition of a conjectural art to the dignity of science. Indeed, if we are in the habit of marking the symptoms, and then ascertaining by dissection whether Hydrocephalus caused them or not, we shall acquire a power of discriminating this disease with a certainty nearly as great as can be acquired in the investigation of subjects ranking under the name of science.

In no case will the practitioner, who by such means compares cause with effect, be led by accidental symptoms to form an erroneous opinion of what is actually going forward. It is by such strict attention to nature that in astronomical and physical inquiries certainty has been arrived at, and that the results of experiment, the connexion between causes and effects, are found undeviating, and therefore can be certainly foreseen.

Yet there was a time when all here was conjecture, and these sciences (now justly so named) might have been ranked amongst merely conjectural disquisitions. Galileo, Bacon, Newton, &c. raised

them, by patient observation, from the low rank which they held, and the same means may give medicine a place not less dignified among the objects of scientific pursuit.

However, if in the disorders of a system so complicated as the frame of man, certain anomalous cases exist, in which the symptoms and the morbid changes do not so clearly correspond ; if cases, with most of the symptoms of water in the brain, may proceed from a totally different cause, this also can be discovered by dissection alone ; and if by another species of anomaly, Hydrocephalus take place without exhibiting the symptoms supposed to be characteristic of the disease, here again dissection would be of use ; for by showing that morbid changes have taken place, though not denoted by the symptoms, we shall in similar cases be induced to suspect that diseased actions are going forward in the brain, and therefore be led to employ remedies for the relief of that organ, to which otherwise our attention would not have been directed.

Dissection cannot, by any means, ascertain the curable or incurable nature of the disease, as in cases which are cured we cannot dissect the brain, nor even if we could, would it be possible to ascertain its existence, as the water, if effused, must, in the event of a cure taking place, be reabsorbed.

Dissection also serves to show the organs most generally diseased where Hydrocephalus is found to exist, and the probable connexion between the disorder of the head and the diseases of these organs.

The name of Hydrocephalus seems an improper one, inasmuch as it leads to the employment of remedies calculated only to excite the action of the absorbent vessels, and removes from view the nature of the complaint in that stage in which perhaps it is alone curable. We thus take the name of the disorder from the consequence of arterial excitement or venous congestion, viz. watery effusion, instead of deriving it from the inflammatory action itself. Might not the acute species arising from inflammatory action be properly denominated Hydrocephalitis?

CASE I.

Jan. 7, 1815. A. S., North Frederick-street, five months old, labours under the following symptoms. Strabismus, dilatation of the right pupil, contraction of the left pupil, which is insensible to the application of light, but the right seems still to possess sensibility; the head and neck are bent backwards. The child is unable to raise its head, which to the assistant feels extremely heavy; sighing and moaning; spasms of the muscles of the

upper and lower extremities ; skin cool in the morning, but hot in the evening, when the face is flushed, and the pulse accelerated ; bowels free, and easily opened by cathartics ; fæces yellowish. The child sucks, and often presses the nipple with great anxiety ; also presses the gums together, as children do whilst teething.

Vesic. Vertici. Pulv. ex Cal. et P. Jacobi.

This child has been ill about a fortnight ; the first symptoms were, a screaming in the night, heaviness, and some uneasy motion of the head, followed by a grinding of the gums, by spasms of the muscles of the left hand and arm, next, of the right hand and arm, and finally, of the lower extremities.

In the first instance two or three leeches were applied to the temples, and ol. ricini was administered. Calomel and James's powder, the tepid bath, and frequent incision of the gums have been prescribed during the last ten days by the physician in attendance.

Jan. 8. Nearly as yesterday ; little effect from the blister ; bowels free ; spasms frequent, they are abated by the tepid bath.

Vesic. Occipiti. Rep. Pulv.

Jan. 9. Both pupils considerably contracted ;

vision lost ; eye-lids paralytic ; pulse 150, and hard ; difficult deglutition. The whole body seems paralyzed. Gums again lanced, but no tooth is discoverable.

Jan. 10. About two hours after yesterday's visit the child died.

DISSECTION,

BY MR. AUCHINLECK, ASSISTED BY DR. ADAMS.

Considerable dilatation of the sutures of the cranium. Dura and pia mater more vascular than usual. Plexus choroides highly vascular, and loaded with blood of a florid hue. On cutting into the ventricles there was a gush of limpid fluid ; this fluid amounted to six ounces. The walls of the ventricles are more pulpy than natural ; with this exception the brain was found sound.

Gall-bladder contains about zii. of greenish bile, of a natural viscosity.

Pericardium contains about zii. of serous fluid.

On cutting the gums no tooth is discoverable.

COMMENT.

We have here an instance of pure* Hydrocephalus in its acute form, and many of the symptoms enumerated were indicative of the disease ; similar symptoms, however, sometimes arise from other causes, and the attending physician formed his plan of treatment on the ground that the complaint proceeded from dentition. On this point the dissection removed all doubt, and showed at once the nature of the attack and the remedies that might have proved serviceable. This is one of the many cases where the most satisfactory information has been derived from an examination of the organic changes produced by disease.

We may form some idea of the violence of the complaint, on the present occasion, from the rapidity of its progress, and the quantity of fluid effused ; for the child a fortnight before death was considered in perfect health, yet not less than six ounces of a watery fluid were detected in the ventricles.

What is remarkable, the pupil of the left eye was never dilated, and towards the close of the illness both pupils were contracted, and equally insensible to the stimulus of light.

* The word *pure* is used to express the disease uncombined with any organic affection, except of the brain.

The bowels were free, and readily acted on by cathartics, an occurrence by no means common in Hydrocephalus.

Of the brain and its membranes it may be said, that they bore visible marks of congestion and inflammatory action.

The abdominal and thoracic viscera were found in a state perfectly natural; if we except a small quantity of serum discovered in the pericardium.

CASE II.

March 27, 1815. Master F., Temple-bar, æt. 7, a fortnight ago complained of chilliness, languor, lassitude, nausea, shooting pains in the temples, and heaviness of the head and eyelids. To these symptoms succeeded shiverings, frequent pulse, hot skin, intolerance of light, acute headach, vomiting, flushing of the face, and loss of rest and appetite. This day about one o'clock, P. M. he was suddenly attacked with convulsions, loss of vision, sense, and voluntary motion; the pupils are dilated, and insensible to light; pulse 132, skin hot, bowels constipated, power of deglutition lost, respiration free, violent palpitation, frequent moaning and screaming.

Pulv. Scam. et Cal. Hirud. xii. temporibus. Vesic. Nuchæ.

28th. Frequent convulsions throughout the night; swallowing at times tolerably easy; pulse 130; head violently thrown backwards; pupils dilated, but more sensible than yesterday to the stimulus of light.

Cr. Pulv. Vesic. Occipiti. Mist. Anodyn.

The convulsions seemed to have been moderated yesterday by the cold aspersion of the face and chest.

29th. No return of convulsion; loss of vision, yet the pupils contract and dilate on the application of light; pulse 126; paralysis of the left eyelid and arm; loss of sense, motion, and power of deglutition.

Died on the evening of the 29th.

DISSECTION,

BY MR. WILMOT, ASSISTED BY DRS. HEALY AND PRICE.

Occipito-frontalis, unusually large and strong. Pericranium easily detached from the cranium. Cranium in different parts highly vascular. Dura mater is attached to the bone in the ordinary way, but its vessels are preternaturally large. Longitudinal sinus loaded with black grumous blood, dilated to double the natural size, and the orifices of

the veins opening into it are much enlarged. The transverse tendinous bands are unusually strong. Veins of the pia mater extremely turgid. Lateral ventricles contain about two ounces of a watery fluid. The common opening between these two ventricles is so much enlarged that the fluid is seen passing from the one into the other. Plexus choroides highly vascular.

Liver, in colour, size, and texture, natural; there are two small patches upon the convex surface of the left lobe, about one-sixth of an inch in depth and width, and of a yellowish white colour; cut into they contain no matter.

Gall-bladder healthy, and contains bile of a greenish yellow colour.

Surface of the spleen is studded with minute tubercles, cream-coloured, and elevated. The surface of the diaphragm in contact with the spleen is similarly affected.

COMMENT.

The symptoms which ushered in this attack, and those which followed during the first ten days, did not prognosticate a termination so speedy and fatal. Lassitude, chilliness, fugitive pains in the head, nausea, and loss of appetite, were signs of a disease which insidiously advanced, and suddenly terminated

in convulsions, and in a loss of vision, sense, and muscular motion.

The appearances observed on the dissection of the brain were, a considerable enlargement of the longitudinal sinus, which was gorged with grumous blood, a turgescence of the veins, and a collection of a watery fluid in the ventricles. The seat and nature of the complaint are thus laid open, and the appropriate remedies are suggested. Such are the important advantages afforded by the pursuit of morbid anatomy; and had a plan of treatment been adopted on knowledge so acquired, the event, in the present instance, might have been favourable; unhappily the child was considered by the physician first called in to labour under a bowel-complaint, the disease of the brain therefore proceeded unchecked. On the approach of convulsions and other alarming symptoms, three additional practitioners were consulted, who, regarding the disease as Hydrocephalus, prescribed the suitable remedies. These proved fruitless; effusion had taken place, and little was to be hoped for, save the alleviation of the sufferings of the patient.

CASE III.

Jan. 5, 1816. Master B., Great Britain-street, æt. 8, eight days ago was observed to cough frequently, to expectorate mucus, and to be languid and

feverish ; for the last four days has been confined to bed, and has complained of headach, nausea, vomiting, and laborious respiration ; at times the cough is violent and spasmodic, the face then becomes livid, and the whole frame is greatly agitated, as in the whooping-cough, which he now appears to labour under. Pulse 126, feeble and irregular ; skin hot ; face livid ; respiration hurried ; troublesome cough, with copious mucous expectoration ; violent throbbing of the heart ; abdomen tense, and pained on pressure ; delirium ; dilatation of the pupils ; frequent moaning ; imperfect vision.

Purgatives and expectorants have been administered. Two children of this family, a boy 9 years old, and a little girl of 18 months, have died within the last week labouring under similar symptoms.

℞. Olei Ricini dr. sex. Ol. Terebinth. dr. duas. M. Sumatur Coch. Min. 3tiis horis cum Aq. Hord. Coch. ii. Vesic. Abdomini.

6th. Died convulsed last night.

DISSECTION,

BY MR. MACNAMARA AND MR. DOYLE.

Lungs so distended that they completely fill both cavities of the thorax ; when cut into, the vesicles and cellular substance are found filled with air and mucus.

Sigmoid flexure of the colon more contracted than usual.

Between the dura and pia mater, towards the posterior portion of the longitudinal sinus, there is a slight adhesion. On making a section of the hemispheres of the brain more red points than usual are discovered. Lateral ventricles more vascular than natural, and contain about half an ounce of serous fluid.

COMMENT.

Cough and slight fever ushered in the attack, hooping cough succeeded, to which supervened dyspnœa, headach, palpitation, a tense and painful state of the abdomen, delirium, moaning, convulsions, and dilatation of the pupils. Purgatives and expectorants were employed, without affording any relief. Such indeed was the violence of the disease, that the child died on the eighth day.

On dissection the air vesicles and cellular texture of the lungs were found considerably distended with air and mucus, a circumstance sufficient to account for the death of the child, for in all such cases the supply of atmospheric air is not sufficient to produce the proper change in the blood. But morbid appearances were also discoverable in the brain,—an adhesion between the dura and pia mater, and a serous fluid in the ventricles.

In this instance Hydrocephalus supervened on a violent affection of the lungs.

Was the effusion the consequence of congestion and excitement in the vessels of the brain, induced by the impeded circulation of the blood through the lungs ?

As the liver and the remaining abdominal viscera were sound, does not this case, in conjunction with other similar ones stated in this paper, show that Hydrocephalus is more frequently accompanied by diseased actions in the thoracic than in the abdominal viscera ?

CASE IV.

Feb. 16, 1816. Master L., Peter-place, æt. 6, ten days ago was observed to be languid ; the appetite gradually diminished ; the complexion became sallow ; the spirits low ; and there was a dull pain in the head, accompanied by a sense of weight and uneasiness. An opening medicine was administered ; three days afterwards medical advice was called for. The skin was then hot and dry ; the tongue yellow and furred, and the pulse very frequent ; pain was felt in the umbilical region on pressure ; there was restlessness and frequent sighing. Powders of calomel and scammony were given, and an aperient mixture with infusion of senna. The bowels were

opened with difficulty ; no alleviation of the symptoms followed, and to those already enumerated supervened stupor, frequent moaning and sighing, and involuntary dejections of a green or yellowish colour. On the evening of the 16th the pupils were almost insensible to the impression of light ; the head was thrown backwards ; the pulse was 130, and irregular ; and there was a considerable degree of stupor.

Early on the morning of the 17th the child died.

DISSECTION,

BY MR. MACNAMARA, ASSISTED BY MR. KING AND DR.
DUNCAN.

Mesenteric glands considerably enlarged. Different portions of the ileum are thickened, and of a dark red colour. Villous coat is found irregular on its surface, and thickened ; it has lost its valvular appearance, and resembles that of the raspberry : in one of these indurated portions is a small cavity of the size of a spangle, filled with a steatomatous substance ; a second portion, when cut into, presents nearly the same appearance. Cavity of the cæcum empty ; its coats healthy, except where the ileum enters, and there the lips of the opening are thickened, protruded, and more vascular than usual, and the opening of the ileum is circular. Spleen enlarged, and more vascular than usual. Liver of

a natural appearance and structure. Gall-bladder filled with a yellowish fluid.

Dura mater preternaturally vascular, particularly along the course of the longitudinal sinus. The arachnoid membrane is separated from the pia mater by a serous effusion at the posterior part of the cerebrum. Pia mater bears marks of venous congestion. The lateral ventricles are considerably enlarged, and contain about an ounce of a watery fluid. Cerebellum of a natural appearance.

COMMENT.

We may remark that Hydrocephalus, the cause of death in this instance, was unaccompanied by acute pain in the head or dilatation of the pupils, and was but of ten days' duration. The stupor, the frequent moaning and sighing, the restlessness, the dejected expression of countenance, and the throwing of the head backwards, were indicative of morbid actions and compression of the brain.

The thickened, vascular, and steatomatous appearance of the ileum and caput coli, is sufficient to account for the pain and uneasiness felt in the bowels. This affection was of a scrofulous nature, was apparently of long standing, and would, most likely, have eventually terminated in ulceration and death had not Hydrocephalus supervened.

CASE V.

Nov. 23, 1816. Master B., Clarendon-street, æt. 12, six days ago, in consequence of a fright, was seized with headach, chilliness, nausea, and vomiting. Pulse 112, regular and strong; skin hot; tongue foul and yellowish; pain in the forehead; prostration of strength; alternate flushing and paleness of the face; low delirium.

For several days before the attack this patient was subject to drowsiness; and about a month ago, while playing, fell upon his head.

Cathartics have been administered.

V. S. 3viii. Pulv. ex Jalap. et Cal.

25th. Immediate ease from the bleeding; blood slightly buffed; serum in small quantity; four dejections, greenish and yellow; urine turbid, depositing in one glass a jelly-like, in another a pinkish sediment; low muttering delirium; pain in the forehead; sense of weight in the occiput; pulse 106; skin hot; occasional exacerbations and remissions of headach and fever; sighing and moaning; speech at times indistinct.

Hirud. xxiv. temporibus. Pulv. ex Cal. et Scam.

Nine o'clock, P. M. Nausea and vomiting throughout the day ; frequent sighing and moaning ; alternate paleness and flushing of the face ; low delirium ; is unable to raise his head, or hold a glass in his hand ; pulse 108 ; skin cool ; tongue clean ; speech indistinct ; sight good ; pupils natural ; stupor so great that he does not complain of any pain or uneasiness.

V. S. 3xvi. Vesic. Nuchæ. En. Purg. 4tis horis. Habt. Cal. gr. v. 3tiis horis.

26th. Stronger and more collected after the bleeding ; said there was no pain in the head, but a sense of weight in the occiput, equal to a thirty-six pounder ; stupor ; slept a few hours ; no headach ; pains in the left thigh and foot ; pulse 102, strong and regular ; vomiting ; bowels free.

Hirud. xxxvi. temp. Pulv. ex Cal. et Jal.

27th. Headach relieved by the leeching and by the abstraction of blood yesterday evening from the temporal artery ; weakness followed the bleeding ; stupor, and low muttering delirium ; vomiting ; four dejections, yellowish ; pulse 108 ; soft and regular ; thirst ; calls for cold water.

Hirud. xxx. temporibus. Rep. Pulv. ex Cal. et Jal. Vesic. inter Scap.

28th. Slept a little ; spoke coherently this morn-

ing ; sat up in the bed, and called for a glass of water ; no pain, nor sense of weight in the head ; sight and hearing continue ; two dejections, greenish and dark-coloured ; abdomen tense ; urine passed in large quantity ; pulse 108, regular ; skin cool ; tongue clean.

Pil. ex Opio et Cal.

29th. Frequent moaning, and double sighing ; pulse 118, strong and vibrating ; skin hot and dry ; stupor ; delirium ; breathing hurried and oppressed ; head and neck thrown backwards ; left eye-lid half closed ; both eye-balls appear to be enlarged ; sees and hears distinctly, and when roused is coherent ; fæces dark and greenish.

Cr. Pil. et Pulv. Cath. Vesic. Capiti.

30th. Screaming ; he often clasps the head suddenly with both hands ; strabismus ; stupor ; delirium ; pupils contracted ; pulse 124.

Cr. Pil. Habt. Pulv. ex Scillâ et Cal.

Dec. 1. Screaming and moaning ; vision of both eyes impaired ; pulse 120 ; coma.

Habt. Cal. gr. v. 4tis horis. Cr. Pil. ex Opio. Ung. Hydrarg. 3℥. Infricetur abdomini nocte maneque.

2d. Moaning and screaming ; vision more imperfect ; eyes fixed ; countenance vacant ; uneasi-

ness on pressing any part of the abdomen; pupils contracted, but still very sensible to the impression of light; pulse 126, regular; gums and teeth furred; no mercurial foetor of the breath; bowels open.

Cr. Pil. et Ung. Hyd.

3rd. This patient was visited by the Surgeon General. Died at two o'clock, A. M.

DISSECTION,

BY MR. MACNAMARA AND ASSISTANT.

About three drachms of a watery fluid are contained in the lateral ventricles. There are two ounces of a similar fluid at the base of the brain and in the theca spinalis. The substance and the membranes of the brain are of a natural appearance.

Bladder so considerably distended with urine as nearly to reach the umbilicus. Liver, and the remaining abdominal viscera, healthy. Left lung generally adherent; its substance is healthy. The pericardium contains about two drachms of a serous fluid.

COMMENT.

Here is a case of acute Hydrocephalus. Head-ach, shivering, nausea, prostration of strength, and

other feverish symptoms ushered in the complaint, which in fourteen days terminated fatally.

The animal functions throughout the entire of the illness were considerably impaired. This patient, from his low muttering delirium, and his drawling tone of voice, seemed to live in a world of his own formation.

The pupils were not at any time preternaturally dilated; towards the close they were rather more contracted than natural. The pulse varied in strength and frequency, but was not unusually slow in any stage of the disease.

To the increased action of the vessels of the brain are referrible the pain of the head, heat of skin, delirium, thirst, and the remaining febrile symptoms.

The serous fluid discovered in the ventricles and at the base of the brain is sufficient to account for the imperfect vision, the insensibility of the iris, the moaning, the disturbance of the intellectual functions, and the paralysis of most of the muscles of the body.

The retention of urine for several hours before death was owing to the repeated and continued application of blisters to the head; and to this reten-

tion we may impute the uneasiness felt on pressing the abdomen, and the frequent contraction of the lower extremities.

Some opinion may be formed of the violence of the disease from the failure of the remedies employed. Blood-letting, general and local, always afforded relief, but this was only temporary. On the evening of the 28th of November, the tenth day of the attack, the stupor and debility were so considerable, that the power of seeing, hearing, speaking, and voluntary motion were nearly extinguished; in this state sixteen ounces of blood were taken from the arm, after which the patient was able to sit up in bed, and speak rationally and distinctly. By the operation of the purgatives large quantities of greenish bile were daily carried off. As the liver was found in a state perfectly natural, and the gall-bladder was distended with bile of the same appearance, we may ascribe this vitiated secretion to the accelerated and irregular actions of this viscus, caused, partly by its sympathy with the brain, and partly by the general excitement of the entire vascular system.

Blisters were applied between the shoulders, upon the nape of the neck, the occiput, and the right hypochondrium; the only sensible effect produced by these applications was, pain, strangury, and retention of urine.

In the course of ten days two drachms and a half of calomel were exhibited ; and during the last three days six drachms of the ung. hydrargyri were rubbed into the abdomen, yet no ptyalism followed, nor was any impression made on the disease by this large quantity of mercury. Opium was given to mitigate pain and to procure rest, and with some good effect.

Where remedies so powerful failed to arrest the progress of the disease, may it not be suspected that effusion had taken place before their employment ?

CASE VI.

Dec. 6, 1816. Miss M., Capel-street, æt. 7, a very healthy child, two days ago was suddenly seized with shivering, headach, nausea, vomiting, and pain in the right hypochondrium. Pulse 116, of good strength ; skin hot and dry ; tongue foul ; no appetite ; thirst ; pain in the forehead and occiput.

V. S. ℥viii. Pulv. Cath. ex Cal. et Jalapâ.

7th. Headach relieved for a few hours by the bleeding ; the pain is now deeply seated in the occiput ; frequent vomiting ; face flushed ; throbbing of the temples ; three dejections of a greenish yellow hue ; urine high coloured ; pulse 120, strong.

V. S. ℥vi. Vesic. Nuchæ. Cr. Pulv.

8th. No relief from the bleeding of yesterday ; blood dense ; acute pain in the forehead and occiput ; restlessness ; delirium ; moaning, sighing, and crying ; frequent retching and coughing ; pain in the right hypochondrium abated ; pulse 112 ; skin hot and dry.

Hirud. xxiv. temporibus. Mist. Cath. Cr. Pulv.

9th. No relief from the application of the leeches : says she feels as if a considerable weight were placed upon her head ; delirium, moaning, and crying ; fever high ; face alternately pale and flushed ; pulse 124 ; skin rather cool ; five dejections, fetid, green, and yellowish ; general soreness of the flesh ; unwillingness to move the head ; lies chiefly on the back ; loss of taste and smell.

V. S. ζ viii. Pil. ex Opio et Cal. Pulv. Cath. Vesic. Occipiti.

10th. Not blooded ; delirium ; stupor ; pulse 114 ; face of a scarlet hue ; pain in the forehead, occiput, and right hypochondrium ; soreness of the flesh ; considerable uneasiness on any motion of the head.

Hirud. xx. temporibus. Cr. Pil. et Pulv.

11th. Restlessness ; frequent retching and moaning ; stupor ; coldness of the lower extremities, while the face and body are intensely hot ; inability to raise the head ; five dejections of a light green

colour ; pulse 124 ; vision imperfect ; pupils of a natural appearance.

Pulv. ex Cal. et P. Ipecac. C.

12th. Screaming “ Oh, my head ! ” headach ; delirium ; stupor ; pulse 120 ; feeble and irregular.

Cr. Pulv. Vesic. Capiti abraso.

13th. Mercurial foetor of the breath ; several dejections ; urine passed in large quantity ; deafness ; at times perfectly collected ; frequent retching.

Cr. Pulv. Hirud. xx. temporibus.

15th. Ptyalism ; swelling of the jaws ; pain in the occiput and forehead ; pulse 110 ; sight perfect ; pupils natural.

M. Cath. ex Inf. Sennæ. Cr. Pulv. sine Cal. Utr. Ung. Hydrarg.

17th. Screaming, moaning, and delirium ; unwillingness to move the head ; pulse 126, feeble and irregular ; face alternately pale and flushed.

Cr. Ung. Hyd. et Pulv.

18th. Weakness of the eyelids ; pupils rather contracted ; bowels open ; vision continues.

Cr.

19th. Died this morning.

DISSECTION,

BY MR. MACNAMARA AND MR. BEVAN.

Dura mater more vascular than natural. A serous effusion is discoverable under the arachnoid membrane. Glandulæ Pacchioni larger than usual. Surface of the cerebrum preternaturally vascular. Numerous red points appear on cutting through the substance of the brain. Lateral ventricles contain about two ounces and a half of a watery fluid; their walls are highly vascular. Plexus choroides turgid with blood. Cerebellum when cut into exhibits very many minute red points.

Lungs of a natural appearance and texture. Pleura pulmonalis and costalis on both sides pretty generally adherent. Pericardium contains about an ounce of serous fluid. Omentum adheres slightly to the left lobe of the liver. Gall-bladder distended with a greenish yellow bile.

COMMENT.

This is a case of acute Hydrocephalus which ran its course in fourteen days. On the 4th December the disease commenced; on the 19th it terminated in death.

There was no organic derangement except in the

brain. Exposure to wet and cold was the only cause to which the attack could be assigned. There was no family predisposition to Hydrocephalus, and this child had previously enjoyed good health.

Shivering, headach, anorexia, and the usual febrile symptoms, ushered in the complaint ; to these succeeded retching, moaning, delirium, stupor ; and finally, screaming, inability to raise the head, impaired vision and hearing, and a loss of taste and smell. So morbidly sensible was the skin, that the application of the finger to any part of the body gave great uneasiness.

On dissection the appearances were, serous effusion in the ventricles and between the membranes, turgescence of the veins, and numerous red points distributed throughout the substance of the brain. These appearances are indicative of previous congestion and inflammation, and are sufficient to account for the principal phenomena.

There are some circumstances in this case which should not be passed over unnoticed. Pain was often complained of in the right hypochondrium, yet the liver was free from disease, and slight adhesions were found between the pleura pulmonalis and costalis of the right side. Was not the pain referrible to the diseased actions going on in these membranes?—How often, and with what fatal consequences, has

mercury been administered under similar circumstances, on a suspicion that the liver was diseased.

The bowels yielded readily to the action of purgatives. The pulse was not at any time slow, nor were the pupils dilated. But what may be deemed remarkable was the ptyalism, so unusual an occurrence in Hydrocephalus, that of the many cases I have met with, this was the only one in which mercury produced this effect.

The mode of treatment pursued was sedative, and the remedies were actively and assiduously employed, yet no impression was made on the disease; perhaps effusion took place during the first three days of the complaint before the employment of any active remedy.

CASE VII.

Jan. 8, 1817. Mr. C.'s infant child, Fitzwilliam-street, 6 months old, on Monday the 6th instant, at two o'clock, P. M., was suddenly seized with convulsions of the body and extremities of a few minutes duration, and which have since frequently returned; vomiting came on immediately after the first attack. Leeches have been applied to the temples, and blisters behind the ears. The bowels have been opened by scammony and calomel. Pulse 106; feeble; skin hot; pupils of a natural appearance;

sight good ; abdomen soft ; stupor ; frequent sighing ; diminished appetite.

Hirud. sex temporibus. Vesic. Vertici. Cal. gr. ii. 4tis horis.

9th. Much uneasiness is caused by pressing the abdomen ; frequent returns of the convulsions ; pulse feeble, frequent, and irregular ; three or four dejections, yellowish and green ; belly soft ; skin cool ; vision impaired ; pupils contracted ; frequent sighing and moaning.

Vesic. Nuchæ. Mist. Opiata.

10th. Vision lost ; pupils contracted ; fæces curdy, and of a greenish yellow colour ; convulsions less frequent ; stupor, sighing, and at times screaming.

Rep. Mistura Opiata. Pulv. ex Cal. et P. Ant.

11th. Died at two o'clock, P. M.

DISSECTION,

BY MR. JAMES ADAMS, ASSISTED BY DR. ADAMS.

The dura mater of the right hemisphere of the brain is crowded with minute florid vessels. A serous effusion is perceptible between the arachnoid membrane and pia mater. Falx highly vascular and florid. About an ounce and a half of a limpid fluid, not coagulable by heat, are found in the lateral ventricles.

Right lung natural. A portion of the left is highly florid, and denser than natural. Pericardium contains about two drachms of a watery fluid. Liver perfectly natural. Gall-bladder contains about ʒiiss of bile, of a deep green colour, and very ropy. A small portion of the mucous membrane of the pylorus, duodenum, and ileum, is covered with minute florid vessels.

COMMENT.

This is a case of acute idiopathic Hydrocephalus which terminated fatally in five days. No symptom indicative of disease was observed previously to the convulsions; the child fed and slept well, was lively, and the bowels were in a state perfectly natural.

About a fortnight before the attack the complexion was unusually florid, and the flow of spirits great; this was manifested by the vivacity of the eye and countenance, and the playful movements of the hands and arms.

The state of health now mentioned merits particular notice, because it indicates an excitement of the brain, which produced the fatal effusion; and this excitement in the present instance we may ascribe to repletion, for to this infant, six months and a half old, were given daily the suck of a healthy nurse and three pints of new milk, to which were occasionally superadded bread and broth, or panada.

On examination we shall find that the appearances observed on dissection are explanatory of the phenomena. The convulsions, loss of vision, moaning, sighing, and screaming, were caused by the disease of the brain in its different stages of excitement and compression.

The inflammation discovered in the mucous membrane of the duodenum and ileum serves to account for the uneasiness occasioned by pressing the abdomen.

The fæces took their tinge from the bile, which in the gall-bladder was of a deep green colour; and this vitiated secretion was the consequence of increased and irregular actions in the liver produced by the irritation of the brain, for previously to the convulsions the fæces were of a natural appearance.

In this, as in all other instances of Hydrocephalus terminating in effusion, I have found that the disease, though not cured, was mitigated by those sedative remedies, which in its early stage may sometimes prove successful.

CASE VIII.

Feb. 16, 1817. Mr. A.'s infant child, Bridge-street, aged four months. Vomiting, and bilious diarrhœa; convulsions; inability to suck; eyes

fixed; pupils rather contracted; pulse frequent, feeble, and irregular; skin hot; hand frequently applied upon the right eye and temple; abdomen soft.

Yesterday this child was lively, and apparently in good health; last night it was observed to be weak, languid, and restless; the bowels were unusually free; the fæces of a light green colour, and yellowish. Castor oil was given. During the preceding week the bowels had been rather confined.

Hirud. vi. temp. Pulv. ex Cal. et Scam.

17th. Stupor; eyes fixed; sight apparently lost; pupils contracted; pulse very frequent and irregular; skin cool; three dejections, yellowish; belly soft; sighing; hand often applied to the right eye and temple; some uneasiness on pressing the epigastrium; vomiting.

Baln. tepid. Vesic. epigast. En. Purg.

18th. Died last night.

DISSECTION,

BY MR. MACNAMARA.

A serous effusion is apparent between the arachnoid membrane and pia mater. The right hemisphere of the brain, to the extent of about two inches in width and three in length, is highly vascular and

florid. Plexus choroides excessively turgid with blood. In the ventricles, and at the base of the cranium, about three drachms of a watery fluid.

Abdominal viscera sound. Mesenteric glands enlarged and hardened. Lungs sound. Slight adhesions between the pleura pulmonalis and costalis of the left side.

COMMENT.

In the night of the 15th of February this child was, for the first time, observed to be weak, languid, and restless; this indisposition was attended by a bilious diarrhœa. On the following morning vomiting and convulsions came on; the eyes were fixed, and the sight to all appearance was lost. Death took place in the night of the 17th.

On examination marks of inflammation were visible in the right hemisphere of the brain, and a watery effusion was found between the membranes, in the ventricles, and at the base of the cranium; the other viscera were sound. This then was a case of unmixed acute Hydrocephalus occurring in an infant four months old, without any apparent cause, and which proved fatal in the evening of the third day; and what is remarkable, the child was previously lively, and in good health.

On the morning of the 16th, about twelve hours after the first symptom of indisposition, convulsions came on. Had not effusion then taken place?

The constipation and subsequent diarrhœa led, on a superficial view, to the suspicion that the disease was seated in the bowels. But the vomiting, the fixed eye, loss of vision, and convulsions, showed that the brain was the organ primarily affected, and this was further proved by the dissection.

CASE IX.

April 9, 1817. Miss T., Great Ship-street, æt. 4, a dull, inactive child, of a florid complexion, who enjoyed good health, appetite, and digestion, but was unable to walk before she was three years old, seven days ago was attacked with headach and vomiting, followed by heaviness and feverish symptoms. Cathartics have been administered. Pulse 136, hard, and irregular; skin hot; tongue foul, and yellowish; fæces tar-like; nausea; pain in the forehead; throbbing of the temples; face alternately pale and flushed.

V. S. ζ vi. Pulv. ex Cal. et Scam. Foveantur crura.

10th. The parents would not suffer the child to be blooded. Three or four dejections, dark, and mixed with blood; headach and fever abated.

Rep. Pulv. Mist. Sal.

11th. Hæmorrhage from the bowels; fæces dark and brownish; some appetite. Much relieved.

Cr. Pulv. et M. Sal.

12th. Return of headach, accompanied by sighing, nausea, and moaning; fæces dark-coloured; stupor; pupils contract and dilate on the application of light, but the right pupil is more dilated than the left; head and neck thrown backwards; pulse 142, irregular; countenance vacant.

Vesic. Capiti abraso. Pulv. ex Cal. Jal. et P. Ant.

13th. Blister not applied; three or four dejections, dark, yellowish, and green, and passed involuntarily; coma; frequent sighing and moaning; restlessness; vision impaired; right pupil much dilated; uneasiness on pressing the right hypochondrium; skin dry; alternate paleness and flushing of the face.

Baln. tepid. Foveantur crura, Cr. Pulv.

14th. Symptoms more urgent; hurried respiration.

Mist. Anodyn.

15th. Died at four o'clock, A. M. No convulsions.

DISSECTION,

BY MR. HYDE, MR. BEVAN, AND MR. CLIFFORD.

Occiput jutting. Serous effusion between the arachnoid membrane and pia mater of both hemispheres, especially of the left. Considerable vascularity, both arterial and venous, of the pia mater of the left hemisphere. About three ounces of a watery fluid are found in the lateral ventricles; these ventricles are dilated, and their walls are soft. Plexus choroides pale. Cerebellum soft, and possessing little vascularity. Some watery fluid is found in the theca vertebralis, and at the base of the brain.

Liver slightly adherent to the diaphragm and abdominal muscles; when cut into it is of a light yellow colour, and rather firmer than natural. Gall-bladder wanting. A single duct is traced passing from the liver into the duodenum, in which bile is found of a bitterish taste and olive colour. On cutting into the right kidney a milky fluid oozed forth; its structure is natural. External surface of the lungs irregular, and covered with tubercles; these tubercles are of different sizes, some containing a cheesy matter, and distributed throughout every lobe.

COMMENT.

Here the urgent symptoms were Hydrocephalic, and on dissection three ounces of a watery fluid were

found in the ventricles. But the extraordinary circumstance in the history of the dissection, was the discovery of a liver without a gall-bladder. A single duct issued from the liver, and terminated in the duodenum, yet the bile in this intestine was yellowish, and had a bitter taste. Previously to the present attack good health was enjoyed, the bowels were free, and the fæces of a natural appearance. It would appear, therefore, that a gall-bladder is not necessary to the digestion and assimilation of our food, or to the increase of our growth and strength.

There was a general adhesion between the external membrane of the liver, the diaphragm, and abdominal muscles, but no other marks of inflammation, or of any other disease of this organ, were perceptible. Its substance, when cut into, had somewhat of an ochrey appearance, and was rather more firm than natural.

The varying state of the fæces during the illness indicated an irregularity of the secretions from the liver and alimentary canal.

The ventricles of the brain were found enlarged, and their walls soft. This would go to show that the effusion was rapid in its progress ; for when slow I have observed that they are, for the most part, if not always, firm and thickened.

Here the disease ran its course in about a fortnight, and the vessels of the left hemisphere of the brain were unusually red and turgid ; blood-letting and other evacuations, early and fully employed, were the only remedies which could have proved efficacious. On the present occasion the bowels yielded readily to the action of cathartics ; in similar cases they are often obstinately constipated. On what may this difference depend ?

About four months ago a younger sister of this patient died ; she was two years old, and laboured under symptoms similar to those above related ; but as no examination took place, the cause of death must remain a matter of conjecture.

It may be here observed, that there was neither cough nor dyspnœa, though the lungs were tuberculated. May not this state of the lungs have predisposed to Hydrocephalus by the congestion it produced in the brain ? And congestion in the brain is sufficient to account for the dullness and inactivity of the child.

Had life been prolonged but for a few years the probability is, that these tubercles would have suppurated, and been followed by phthisis pulmonalis.

CASE X.

April 13, 1817. Master —, Greek-st., æt. 6, a week ago was seized with acute headach, shivering, nausea and vomiting; to these succeeded heat of skin, thirst, foulness of the tongue, restlessness and delirium. Purgatives of different kinds have been repeatedly administered. Fæces dark coloured; urine variable; pulse 66, irregular; tongue covered with a whitish mucus; frequent moaning, sighing, and starting; pupils dilate and contract; pain in the forehead; weaknesses; face alternately pale and flushed; disturbed rest; delirium.

About three months since this boy, who before was of an active, lively disposition, and fond of his books, became dull, inactive, lost his memory and his usual love of study; his complexion changed; and he has latterly often complained of heaviness or pain in his head, nausea, and loss of appetite.

Two years ago a younger sister, æt. $2\frac{1}{2}$, died, labouring under similar symptoms. No examination took place.

The mother of this boy is bilious, and subject to vertigo, sense of weight and pain of the head.

Pulv. ex Cal. et Scam. Hirud. xx. temporibus.

14th. Epistaxis; pulse 104; convulsions of the face and extremities; stupor; pupils dilated; moaning and screaming; respiration at times quick and laborious; three dejections, dark, and greenish; urine high coloured.

Cr. Pulv. Vesic. Capiti.

15th. Frequent returns of convulsions; pulse 116, hard, and irregular; face alternately pale and flushed; vision impaired; restlessness; delirium. When the face is flushed the pain of the head is most acute, and then he screams most violently.

Cr. Pulv.

16th. Bowels open; fæces greenish and yellow. Symptoms nearly as yesterday.

Cr. Pulv. Mist. Anodyn.

17th. Pulse 124, feeble; frequent convulsions; neck and head thrown backwards; pupil of the left eye dilated, that of the right contracted; sight of both eyes lost.

Pulv. ex Cal. P. Ant. et Jal.

18th. A red vesicular eruption appears upon the body and extremities. No variation in the symptoms.

Cr. Pulv. et M. Anodyn.

19th. Pupils of both eyes suddenly contract, and

suddenly dilate. His mother thinks his sight is occasionally restored ; moaning ; screaming ; stupor ; convulsions ; bowels open.

Cr. Pulv. et M. Anodyn.

20th. No change of symptoms.

Cr.

21st. Died this morning.

DISSECTION,

BY MR. HYDE AND MR. MASTERSON.

Dura mater highly vascular. Convolutions of the brain completely filled by coagulable lymph. Between the arachnoid membrane and pia mater there is a considerable effusion of serous fluid. Glandulæ Pacchioni very large. The lateral ventricles contain about three ounces of a watery fluid ; their walls are firm, and preternaturally vascular. Plexus choroides pale. The cerebellum and the inferior portion of the cerebrum are considerably more vascular than natural.

In the ileum are three intus-susceptios ; when examined there is no adhesion, nor any appearance of inflammation or gangrene. Intestines of a natural appearance. Liver perfectly natural in size, colour, and structure. Gall-bladder distended with a greenish bitter bile. Pericardium natural ; it

contains about two drachms of a serous fluid. Heart natural as to size ; but the walls of the left ventricle are twice as thick and firm as those of the right.

COMMENT.

This was a case of unmixed Hydrocephalus : every viscus was sound except the brain, which exhibited marks of increased arterial action and its consequence, effusion into the ventricles, and between the tunica arachnoidea and pia mater.

The first symptoms of this boy's complaint were, a disinclination for study or play, a changing complexion, a diminution of memory, and occasionally a heaviness and pain of the head. These symptoms are generally overlooked, yet they deserve particular attention, especially where one of a family has died of Hydrocephalus, because they indicate the approach of this dangerous malady, which can only be obviated by the timely administration of the most active remedies.

A red vesicular itchy eruption appeared and disappeared suddenly three or four times towards the close of the complaint.

About eight days before death I paid my first visit ; from the slowness of the pulse and some other symptoms then present, it was clear that effusion

had taken place ; blood-letting therefore could avail but little, except in as far as it might have checked the progress of the complaint by diminishing arterial action.

No impression was made on the disease by any of the remedies employed. The opiate seemed to afford relief by alleviating pain, and abating the violence of the convulsions.

An intus-susceptio was found in three different portions of the ileum ; the bowels, notwithstanding, were readily opened by cathartics.

CASE XI.

June 5, 1817. Mrs. M.'s child, aged seven months, Great Britain-street, ill six days, affected with the following symptoms : frequent nausea and vomiting, thirst, heat of skin, moaning, and dyspnoea, but has neither cough nor expectoration. This infant appears unusually dull and languid, and the head so heavy, that it is unable to raise it ; bowels open ; fæces yellowish.

Two infants of this family, under a year old, have died of convulsions. The mother suffers much from vertigo, headach, confusion of ideas, a sense of coldness in the vertex, and indigestion.

Cal. gr. ii. sextis horis. Ol. Ricini q. s.

6th. The forehead of this infant is prominent, and the bones of the cranium are large, when compared with the size of the face. Pulse 118, irregular; skin hot; fæces yellow; breathing quick and laborious; restlessness; vomiting, moaning, and retching; pupils rather contracted than dilated.

Vesic. Nuchæ. Baln. tepid. Cr. Cal. et Ol. Ricini.

7th. The eyes have lost their usual expression; the countenance is languid; the neck is unable to support the head; retching, vomiting, moaning, and fever; convulsive twitchings of the muscles of the face; three dejections, yellowish; pulse 106, feeble, and irregular.

Vesic. Vertici. Rep. Cal. et Ol. Ricini.

Died in the night of the 8th instant.

DISSECTION,

BY MR. MACNAMARA.

Abdominal viscera sound. Lungs sound; there are about six drachms of a serous fluid in the left cavity of the chest.

Surface of the brain more vascular than usual. The ventricles contain about three drachms of a watery fluid, and about half an ounce of the same fluid is found at the base of the cranium.

COMMENT.

This was a case of Hydrocephalus occurring in an infant seven months old, without any apparent cause, and which ran its course in about ten days.

Two children of the same family died labouring under similar symptoms, but as no examination took place the nature of their complaint is only a matter of surmise. The mother is scrofulous, and subject to vertigo and pain of the head. We have reason to think, therefore, from these circumstances, that there is an hereditary disposition to Hydrocephalus, which may render some precautionary measures necessary with regard to the remaining children of the family.

The abdominal viscera were found in a state perfectly healthy; the lungs also were sound; but about six drachms of a watery fluid were discovered in the left cavity of the chest, which may serve in some measure to account for the laborious respiration.

The moaning, retching, vomiting, restlessness, fever, heaviness of the head, and dejected expression of countenance, were indicative of excitement and compression of the brain; but the pupils were rather contracted than dilated, and there was no remarkable variation of the pulse. After death the surface of the brain was found highly vascular, and

in the ventricles and at the base of the cranium was discovered nearly one ounce of a watery fluid.

CASE XII.

June 12, 1817. Master M., Holles-street, æt. 2, a lively child, somewhat rickety ; during the last ten days has been feverish, fretful, and occasionally in a state of stupor ; has vomited frequently, and the bowels have been obstinately constipated. Pulse 124 ; skin hot and dry ; tongue foul and yellowish ; restlessness ; heaviness of the head ; tension of the abdomen.

Pulv. Cath. ex Cal. et Jalap. Hirud. viii. temporibus. En. Purg. Baln. tepid.

13th. Fæces greenish and fetid ; fever abated ; pulse 96 ; vomiting less urgent ; some rest.

Cr.

14th. Vomited the powders ; pulse 92 ; expression of countenance more natural ; three dejections, dark-coloured ; return of appetite.

Mist. Cath. ex Infuso Sennæ, Mannâ, et Tinct. Jalap.

15th. Bowels open ; symptoms mitigated.

Rep. M. Cath.

On the 15th I discontinued my visits. During the three following days the child was apparently

free from disease, and was considered by the attending physician to be convalescent.

On the evening of the 19th strabismus was first observed, and fever, accompanied by heaviness of the head, again set in.

On the morning of the 20th general convulsions came on, and frequently returned. During the paroxysm the eyes are distorted, the face is deeply flushed; there is grinding of the teeth and foaming at the mouth; the hands are clenched; the arms thrust forward and upward, and the body and lower extremities are convulsed. Pulse 134, irregular; pupils dilated; vision lost; deglutition difficult; respiration laborious.

Vesic. Vertici. En. Purg. Pulv. Dom. Jacobi.

22d. Repeated convulsions; face and forehead intensely hot, and of a deep crimson hue.

Died on the evening of the 22d instant.

DISSECTION,

BY MR. MACNAMARA.

Lungs and heart sound. Pericardium contains about two drachms of serous fluid. The ribs are softer than natural. On cutting into the kidneys a whitish fluid, mixed with urine, escaped.

Surface of the brain highly vascular. About three ounces of a serous fluid are found in the lateral ventricles. The same kind of fluid is contained in the cells of the arachnoid membrane, surrounding the juncture of the optic nerves. The arachnoid membrane covering the cerebellum is separated from the pia mater by a serous effusion.

COMMENT.

In the treatment of Hydrocephalus should we discontinue efficient remedies after the removal of the urgent symptoms? I apprehend not.

In the present instance there was a remission of the complaint, and the child appeared to the attending physician and its parents, for nearly four days, to be convalescent. At the end of this period strabismus was observed; this was followed by convulsions, dilatation of the pupils, loss of vision, and shortly afterwards by death. Had blood-letting, general or local, been employed during the remission, aided by cathartics, blisters, the tepid bath, and opiates, might not the occurrence of the effusion have been obviated? If the effusion had then taken place we cannot suppose that the child would have been considered convalescent.

During the first ten days of the illness vomiting was the urgent symptom, accompanied by fever,

constipation, heaviness of the head, and peevishness, symptoms arising from congestion and increased action of the vessels of the brain, and which yielded to depletion; while the convulsions, the dilatation of the pupils, the loss of sight and power of deglutition, proceeded from effusion.

The convulsions in this instance were of an epileptic nature. This is worthy of note, inasmuch as it may serve to show the connexion that exists between Epilepsy and Hydrocephalus.*

CASES AND DISSECTIONS OF CHRONIC HYDRO-
CEPHALUS.

CASE I.

March 12, 1814. Master —, æt. 3, delicate, and born of scrofulous parents, during the greater part of last winter laboured under cough, attended by irregular fever, slight headachs, and peevishness; two months ago was attacked with whooping-cough; the fits of coughing were violent, and sometimes terminated in vomiting, and sometimes

* Twenty cases and dissections of acute Hydrocephalus were presented by Dr. Mills. Eight have been withdrawn at the request of the Committee of Publication, in consequence of the limits within which it has been found necessary to restrict the size of the volume.

in mucous expectoration ; the irregular fever still continues. Bowels constipated ; rest disturbed ; emaciation ; cough frequent ; expectoration of a yellowish mucus ; pulse 104 ; skin hot and moist.

Leeches have been applied to the sternum ; opiates, mucilages, ipecacuanha, and cathartics, have been administered.

Vesic. Sterno. ℞. Calomelanos, P. Antimon. āā. granum. Sacchari Albi, gr. ii. F. pulvis omni nocte sumendus. Hæbt. Olei Ricini coch. min. omni mane.

24th. Fæces yellowish and green ; urine at one time pale, at another turbid ; cough troublesome ; respiration laborious ; irregular fever ; appetite tolerable ; peevishness. Blisters have been applied to the sides and chest, and the antimonial powder, with calomel, has been taken without any obvious benefit. Recommended to the country, and to make trial of asses' milk.

April 10. Cough relieved ; irregular fever ; fretfulness ; frequent sighing ; fæces yellowish ; some uneasiness on pressing the right hypochondrium.

Utatur ter in septimanâ balneo tepido. Infricentur hypochondrio dextro Ung. Hydrarg. gr. xx. omni nocte.

30th. No good effect from the use of the bath and mercury ; restlessness ; delirium occasionally ;

when interrogated as to the seat of pain, the child applies his hand upon the abdomen.

Pulv. Cath. ex Cal. et Scam.

May 5. Moaning; pulse 120; irregular fever; peevishness; teasing cough; mucous expectoration; dyspnœa; fæces yellowish.

Mist. Muc. cum Tinct. Opii pro tussi.

10th. No amendment. Late Mr. Richards in consultation; Mr. Connor in attendance. The belly and spine to be rubbed with fish oil.

Habt. Tinct. Acetatis Ferri gutt. xx. ter quotidie.

16th. Delirium; frequent crying; skin dry and hot; pulse 130; thrusts his fingers frequently into his nostrils.

Pulv. Cath. Milk bath.

20th. Dilatation of the right pupil; paralysis of the right eyelid; nausea and vomiting; coldness and weakness of the left leg; irregular fever; cough and laborious respiration.

22d. Died this morning.

DISSECTION,

BY MR. HEWSON, MR. RICHARDS, AND MR. CONNOR.

The intervals between the convolutions of the brain are obliterated by coagulable lymph. The

substance of the brain is rather softer than usual, and its medullary portion is free from all red points. About eight ounces of a watery fluid are found in the lateral ventricles ; these ventricles are enlarged, and their walls considerably thickened. Plexus choroides paler than natural. A large quantity of coagulable lymph is found effused upon the cerebellum, around the base of the brain, and the origin and course of the optic nerves. The medulla oblongata is covered with coagulable lymph, and about half an ounce of serous fluid flows from under the theca of the medulla oblongata.

Thorax.—There is a mucus-like matter upon the surface of the right lung, the lobes of which are uneven, mottled and tuberculated ; when cut into, numerous small abscesses are discovered, containing a matter, partly cheesy and partly purulent, and of a grey, greenish, yellowish and whitish colour. The inferior portion of the middle lobe has more of a fleshy than a cellular appearance. The left lung is equally diseased with the right. Heart paler and smaller than natural. Bronchial glands much enlarged, and almost converted into a cheesy matter. Trachea free from inflammation, but covered with mucus.

Abdomen.—Right lobe of the liver in size and consistence natural ; its external convex surface studded with numerous whitish specks, somewhat granulated

to the feel. Left lobe perfectly natural; one small portion of it adheres slightly to the diaphragm. Gall-bladder contains about a desert-spoonful of pale bile. Mesenteric glands considerably enlarged, and in part converted into a cheesy substance.

COMMENT.

To find on dissection the lungs diseased was here expected, because the child laboured under cough, dyspnœa, and irregular fever, accompanied by mucous expectoration. But it was rather a matter of surprise to find water in the brain, because the prominent and characteristic symptoms of the complaint were supposed to have been absent. Perhaps we should rather say that the pectoral symptoms were so urgent that others were overlooked, therefore the nausea, fretfulness, delirium, paralysis of the right eyelid, dilatation of the right pupil, and the coldness and weakness of the leg, although the effect of morbid actions in the brain, were referred to those of the lungs and to debility.

It appears to me that where two diseases are co-existent, the symptoms of one may be so violent as to render the patient nearly insensible to the other. The physician too partakes of this insensibility. Totally occupied in considering the symptoms of the prominent disorder, and not directing his attention to that which is less discernible, it escapes his obser-

vation altogether. When, however, the possibility of such a disorder advancing unnoticed towards a fatal termination is once demonstrated by dissection, his attention becomes ever after more awake; he does not allow it to be so engrossed by the urgent danger of one complaint as not to be aware that under its cover another no less dangerous may be spreading, and destroying the springs of life, and he will note every appearance which can indicate its existence, though these would otherwise have escaped his observation.

Calomel and mercurial ointment were employed with a view to remove obstruction of the liver and correct its diseased actions, because some uneasiness was felt on pressing the right hypochondrium, and because the child, on being questioned as to the seat of pain, pointed to the epigastric region. The liver, however, was found perfectly natural, but the mesenteric glands were much diseased. From the hardness and thickness of the walls of the ventricles, and from the general appearance of the brain, we may infer that the effusion was slow in its progress.

Was the effusion the consequence of catarrh, and the subsequent attack of hooping-cough?

This is probable, for in scrofulous habits, predisposed to Hydrocephalus, the blood is accumulated in the head by coughing; hence congestion of the

vessels, increased action and effusion. And in proof of this accumulation we may state that headach, tinnitus aurium, suffusion of the face and eyes, apoplexy and paralysis, are not unfrequent in children labouring under whooping-cough. Accordingly in cases like the present the most effectual way to obviate the occurrence of Hydrocephalus is to diminish the violence of the cough.

CASE II.

April 28, 1816. Mr. D.'s child, aged 7 months, Britain-street, labours under the following symptoms: frequent vomiting and screaming, thirst, tossing of the arms, body, and head, restlessness and emaciation. Pulse 102; skin hot and dry; tongue foul; countenance pale and sallow; left eyelid half closed; abdomen tense; contraction of the pupils on the application of light; scabies of the head.

This child has been ailing for three months; the illness being supposed to proceed from a want of breast-milk in the nurse, a second was procured.

Four children of this family died during infancy; two were supposed to have been carried off by bilious complaints, one by convulsions, and one by the effects of teething.

Habt. Pulv. ex Cal. et Scam. Fetus abdominis.

29th. Three dejections of a light yellow colour ; vomiting less frequent ; restlessness ; tossing of the arms and head ; refuses the breast ; drinks gruel ; moaning and screaming.

Vesic. Vertici.

30th. Eyes fixed ; film over the right ; vision impaired ; pupil of the left eye more dilated than that of the right ; skin cool ; pulse 106 ; screaming ; fæces greenish ; abdomen soft ; thirsty, and drinks with eagerness ; no vomiting.

‡Vesic. Occipiti. Cal. gr. i. 3tiis horis. En. Purg.

May 1. Symptoms much as yesterday.

Cr. Cal. et En.

2d. Died early this morning.

DISSECTION,

BY MR. MACNAMARA.

Bones of the skull unusually vascular. Dura mater highly vascular. Longitudinal sinus turgid with blood. Minute vessels upon the surface of the brain considerably distended with red blood. On cutting into the substance of the cerebrum a great number of red points are observable. The parietes of both lateral ventricles, and those of the third ventricle are in a state of great turgescence from venous blood. Plexus choroides more vascular

than natural. About three drachms of a serous fluid are discovered in the lateral ventricles. Cerebellum and part of the spinal marrow are preternaturally vascular. About half an ounce of a watery fluid is found at the base of the cranium and in the theca spinalis.

Liver of a natural appearance. Gall-bladder nearly filled with a light-greenish bile. Intus-susceptio in three different portions of the small intestines.

COMMENT.

This infant was in a delicate state of health for three months before medical advice was called for. Restlessness, tossing of the arms, occasional refusal of the breast and constipation of the bowels, were the first symptoms of disease. A few days before death vomiting came on, followed by frequent screaming and moaning, thirst, a staring look, a wild and anxious expression of countenance, impaired vision, and paralysis of the right eyelid. From the frequent vomiting, and the morbid contents of the alimentary canal, the complaint was considered to be bilious.

On dissection the brain was the only organ found diseased, and the morbid appearances discovered in this viscus are fully sufficient to account for the phenomena.

Four other children of the same family died during infancy, respecting the nature and causes of whose complaints we have little more than conjecture. If there had been an examination of the body of the first or second of these infants, might it not have led to the adoption of measures that would have preserved the lives of the others?

Intus-susceptio was observed in three different portions of the small intestines; though we were to suppose that this took place before death, we cannot think that it shortened the life of the patient, because it was unaccompanied by inflammation or obstruction. The gall-bladder was found nearly filled with greenish bile; to the presence of this fluid, therefore, in the intestines, we may ascribe the colour of the fæces.

Effusion had taken place before medical aid was called for; at such a period the physician could only mitigate the sufferings of the patient.

CASE III.

Dec. 4, 1816. Miss P., Dorset-street, æt. 8, complains of pain in the left side of the head, and frequent retching. Pulse 66 and regular; skin cool; tongue whitish; lassitude; chilliness; restlessness; loss of appetite; peevishness. Purgatives have been administered. The present illness is of

five or six days continuance. For some months past this child has laboured under dyspnœa, cough, palpitation of the heart, and occasionally of slight pain in the left side.

℞. Calomelanos, Scammonii, āā. gr. xx. Sacchari Albi gr. iii. Divide in partes quatuor. Sum. un. 4tis horis. Hirud. x. temporibus.

5th. Ease for a few hours was procured by the application of the leeches; three dejections, dark-coloured; urine turbid; pulse 62, regular; frequent chilliness; skin cool; pain confined to the left side of the head, but not so severe as yesterday; considerable languor and heaviness; præcordial oppression; palpitation of the heart.

Rept. Pulveres. Hirud. octo tempori sinistro.

6th. Pulse 60; acute headach this morning; nausea; four dejections, yellow, and dark-coloured; urine reddish; face alternately pale and flushed.

Vesic. Nuchæ. Hirud. xii. temporibus.

7th. Headach relieved; frequent retching; pulse 66; moaning; sighing and restlessness; frequent picking of the nose.

℞. Cal. Extr. Opii Aquosi, āā. granum. Ft. pil. h. s. sumenda. Cr. Pulveres.

8th. Rest for a few hours was procured by the opiate; retching, moaning, and sighing; frequent

picking of the nose, and thrusting of the fingers into the nostrils ; pulse 72 ; skin hot ; fæces yellowish.

Vesic. tempori sinistro. Rep. Pil. ex Opio. Habt. Ol. ricini dosin. En. Purg.

9th. Pulse 80 ; skin hot and moist ; moaning, sighing and retching continue ; pain as usual in the left hemicranium ; bowels free ; delirium.

Habt. P. Jacobi grana iii. 4tis horis. Rep. Pilula ex Opio.

10th. Skin hot and moist ; stupor and delirium.

Hirud. xii. temporibus. Vesic. Occipiti. Rep. Pulv. Cath.

11th. Temporary ease from the application of the leeches ; screaming and moaning ; pulse 94 ; skin hot and moist ; tongue clean ; fæces dark or greenish.

P. Jacobi gr. iv. 3tiis horis.

12th. No sensible effect from the James's powder ; stupor ; delirium and moaning ; sight imperfect ; pulse 114.

Cr. P. Jacobi. Vesic. Vertici.

13th. Slight convulsions yesterday evening ; pupil of the left eye more dilated than that of the right ; bowels open ; no vomiting nor retching ; pulse 122 ; frequent moaning and sighing.

Rep. Pil. ex Opio. Pulv. Cath.

14th. Both pupils extremely dilated ; vision imperfect ; delirium and moaning ; involuntary dejections ; pulse 132, irregular and feeble ; convulsions this morning.

Pil. ex Opio.

15th. Vision lost. Died convulsed this evening.

DISSECTION,

BY MR. MACNAMARA, MR. NORTH, AND MR. BETTY.

Dura mater highly vascular, and covered with a serous fluid ; minute florid arteries and turgid veins are distributed throughout this membrane. Upon the left hemisphere of the brain the veins are excessively turgid, and numerous red points are observed in its substance. Along the course of the vein which returns the blood of the middle cerebral artery, a thick purulent fluid is found deposited at different points between the pia mater and the arachnoid membrane. Cortical part of the brain of a very dark colour. Left lateral ventricle highly vascular, enlarged to nearly four times its usual size, and distended with about three ounces of a watery fluid. Right hemisphere of the brain not so vascular as the left, but the same vein as in the left hemisphere is opaque, and a similar purulent fluid is apparent, but not in so many points. Right lateral ventricle as vascular, and nearly as large as the left. Plexus choroides excessively vascular. Base of the brain

loaded with numerous minute florid vessels. Optic nerves surrounded at their juncture by a serous fluid contained in the cells of the arachnoid membrane. Pons Varolii exhibits on its surface the same anasarous appearance as that which is observed round the optic nerve. About two ounces of a watery fluid are found at the base of the brain, and in the theca vertebralis.

Thorax.—Serous membrane of the lungs opaque. Both lungs, when cut into, are found studded with numerous small round tubercles contained in a whitish membrane; these tubercles are of a caseous nature. Pericardium contains nearly an ounce of a serous fluid. Right auricle of the heart distended with blood, partly fluid, and partly coagulated. Right ventricle rather contracted in size when compared with the auricle. Left ventricle likewise more contracted than usual. A small portion of the omentum adheres to the right lobe of the liver. Cæcum and the ascending portion of the colon are distended with fæces and flatus. The transverse arch and the descending portion of the colon are considerably diminished in diameter. There is nothing remarkable in the internal membrane of this gut. Liver of a natural appearance and structure. Gall-bladder filled with a greenish yellow bile.

COMMENT.

This little patient, after having been interrogated for several days as to the seat of pain, always placed her hand upon the left hemicranium. On dissection the left hemisphere of the brain was covered with several purulent points, and it exhibited other marks of inflammation in a greater degree than the right hemisphere.

The venous congestion of the brain, the numerous minute florid vessels distributed throughout its substance, and the serous fluid discovered in the ventricles, are sufficient to account for the headach, delirium, stupor, moaning, convulsions, and several other phenomena mentioned in the case. The lungs were tuberculated, and a preternatural quantity of serum was found in the pericardium. These appearances are explanatory of the cough, dyspnœa, and palpitation of the heart. Was the diseased state of the lungs, by inducing for months a congestion of blood in the brain, the cause, in this instance, of Hydrocephalus ?

That venous congestion was present in the brain, and in a considerable degree, appeared from the dissection. There was no family predisposition to Hydrocephalus ; there was no other apparent or ostensible cause ; the abdominal viscera were sound, and

Hydrocephalus supervened to a long-continued indisposition of the lungs. We may further state, in proof of the connexion between diseases of the lungs and Hydrocephalus, that extravasation of blood or lymph not unfrequently succeeds to whooping-cough, pneumonia and peripneumonia notha. It may be proper to notice the purplish colour of the venous blood seen in the brain. Is this appearance to be ascribed to the imperfect change the blood had undergone in the lungs?

The purulent matter found in the veins should not be passed over in silence.

Was the frequent picking of the nose, and the thrusting of the fingers into the nares, caused by the watery fluid in the ventricles irritating their nerves and lining membrane? Pulling the eyelids and rubbing the eyes are common symptoms in this complaint, and are they not occasioned by the irritation of the nerves going to those parts?

At the commencement of the attack vomiting and retching often occurred; towards its close James's powder and the most nauseating medicines were not rejected, showing that the same cause in a slight degree irritates, and in a greater blunts the nervous and muscular powers of the stomach. Of the different remedies prescribed, none made any impression on the complaint. Some relief was afforded

by the opiate, and the application of leeches to the temples. The constitution is so difficultly acted on by mercury in Hydrocephalus that this circumstance may be considered, in some measure, as a test of the disease; few indeed are the instances in which it makes any sensible impression on the habit, no matter in what form or quantity it may be administered.

CASE IV.

May 20, 1817. Miss —, Lower Dorset-st., æt. 3, of a delicate frame, labours under a general papular eruption, which is itchy, and often disturbs her rest. This eruption is most copious upon the abdomen, (Prurigo of Dr. Willan.) Digestion and appetite irregular; occasional languor and heaviness; complexion pale and sallow; pulse rather frequent. These symptoms are of some weeks duration.

A younger brother, aged 2, after a lingering illness, died of convulsions.

Baln. tepid. Cal. cum P. Antimon. omni nocte. M. Cath. cum Iufuso Sennæ omni mane.

26th. Irregularity of the bowels; fæces yellowish; disturbed rest; appetite bad; nausea and vomiting; pulse 116; skin dry; eruption paler, and less troublesome.

Cal. cum Scam. En. Purg. Baln. tepid.

28th. Fæces dark and greenish ; heaviness of the head, and an unusual disposition to rest ; no appetite ; sighing and languor ; irregular fever ; flushing of the face ; uneasiness on pressing the abdomen.

Cr. Cal. cum Scam. En. Purg. M. Salin.

31st. Relieved by the full operation of the medicine.

Cr.

June 4. Frequent vomiting and sighing ; thirst ; tongue foul and whitish ; fæces dark-coloured ; pulse 126, weak, and irregular ; skin hot ; restlessness. Does not complain of pain in any part in particular, but feels soreness on pressing the abdomen ; alternate paleness and flushing of the face.

Cr. Pulv. Hirud. x. temporibus.

6th. Vomiting and fever abated ; fæces yellowish ; some rest.

Cr. Pulv.

9th. Countenance dejected ; return of fever, vomiting, and flushing of the face ; sighing and moaning ; restlessness ; tossing of the arms.

Vesic. Nuchæ. Cr. Pulv.

12th. Little variation of the symptoms ; papular eruption almost removed.

Cr. Pulv.

14th. Strabismus; moaning; screaming; pupil of the left eye considerably dilated; face pale and flushed alternately; countenance dejected; fæces greenish, and like to chopped parsley; tossing of the arms; pain on pressing the abdomen; pulse 126, feeble and irregular.

Hirud. x. temporibus. Mist. Cath. Baln. tepid.

15th. Some alleviation of the symptoms.

Vesic. Nuchæ.

16th. Sight of the left eye much impaired; convulsions of the upper extremities; frequent sighing and moaning; pulse 132; respiration hurried.

Fotus abdominis. En. Fætîd. cum Tinct. Opii.

18th. General convulsions; sight of both eyes lost; right pupil contracted; left dilated; screaming and moaning.

Mist. Anodyn.

Died in the night of the 18th instant.

DISSECTION,

BY MR. MACNAMARA, MR. CLIFFORD, AND MR. M'KAY.

Thoracic and abdominal viscera of a natural appearance. Some of the mesenteric glands are enlarged, and on examination are found to contain a cheesy matter deposited in a cyst in their centre.

The vessels on the surface of the brain are much distended. Slight effusion of a serous fluid between the arachnoid membrane and pia mater. The ventricles contain about three ounces of a watery fluid. The substance of the brain, in colour and consistence, is nearly of a natural appearance.

COMMENT.

This was a case of chronic Hydrocephalus, unconnected with any disease of the thoracic or abdominal viscera. A delicacy of health, indicated by a pale, sallow complexion, disturbed rest, an irregularity of appetite and digestion, and by occasional heaviness and languor, was first noticed, and was of long duration. This delicacy was ascribed to the papular eruption, for the cure of which several medicines were prescribed. As eruptions of this nature are often witnessed in healthy children, it may be regarded in the present instance as an occurrence merely accidental. Throughout the entire of the case the pulse was always above 100. The pain felt on pressing the abdomen, and the greenish appearance of the fæces, led to the supposition that the disorder was seated in the bowels. On examination the bowels were found in a natural state, but the gall-bladder was distended with greenish bile, to which we may ascribe the colour of the fæces.

It is rather singular that pain in the head was

not at any time complained of. The pupil of the left eye was dilated; that of the right contracted. Vomiting was a frequent symptom in the early period of the attack; during the last week the vomiting ceased. Convulsions and loss of sight were noticed only three days before death.

CASE V.

May 21, 1817. Master R., Lower Exchange-street, æt. 7, complains of heaviness and pain of the head, tinnitus aurium, restlessness, nausea and diminished appetite. Countenance languid and pale; skin hot; pulse 106; tongue foul; thirst. Has taken purgatives.

V. S. ℥vi. Vesic Vertici. Mist. Cath. quotidie.

25th. Immediate ease procured by the bleeding; profuse discharge from the vertex; fæces yellowish and dark-coloured; fever abated; head considerably relieved.

Rep. Mist. Cath.

30th. Gradual amendment.

Cr.

June 16. The affection of the head has returned.

V. S. ℥vi. Vesic. Vertici. Habt. Cal. gr. ii. omni nocte, et omni mane Mist. Cath.

19th. Fever, pain, and sense of weight in the head abated.

Vesic. Nuchæ. Cr. Cal. et M. Cath.

26th. Complaints apparently removed.

July 12. The disease of the head has again returned, accompanied by the usual feverish symptoms: bowels free; fæces yellowish; urine high coloured; troublesome cough; dyspnœa on going up stairs.

V. S. ζ vi. Pulv. ex Cal. et Scam.

14th. Some amendment.

Hirud. xii. temporibus.

18th. Says his head is free from pain and uneasiness; pulse 116, irregular; skin hot and dry; fæces yellowish; urine deposits a lateritious sediment.

Pulv. Cath. p. r. n.

Aug. 10. Cough and dyspnœa, unattended by expectoration; palpitation; ascites; anasarca of the lower extremities; fæces yellow; urine as in last day's report; pulse frequent and irregular; face livid; pains in the right hypochondrium, and throughout the abdomen; purplish spots upon the belly and extremities. These complaints have existed in a low degree during the last fortnight.

Vesic. Sterno. Mist. Expect. M. Cath,

15th. Stupor ; delirium ; moaning ; pulse 120 ; dropsical and pectoral symptoms unabated.

Vesic. inter Scap. Pulv. ex Cal. et Jalap.

22nd. Restlessness, moaning, and screaming ; cough ; orthopnœa ; no expectoration ; delirium ; violent palpitation ; pulse feeble, irregular, and intermittent ; pain on pressing any part of the abdomen ; hemorrhæa petechialis.

Fotus abdominis. Mist. Cath.

Died in the night of the 23d.

DISSECTION,

BY MR. MACNAMARA AND DR. ADAMS.

General effusion of a serous fluid between the arachnoid membrane and pia mater. Surface of the brain highly vascular. About two ounces of a serous fluid are found in the ventricles and at the base of the brain. Considerable quantity of serous effusion in the arachnoid membrane, around the junction of the optic nerves.

Abdomen. —Recent and old adhesions between both lobes of the liver and the diaphragm, and the parietes of the abdomen. Three pints of a serous fluid in the cavity of the abdomen. Both lobes of the liver enlarged, hardened, and more vascular than natural ; externally their surface is dotted with

numerous small, whitish tubercles ; internally are several small tubercles containing a cheesy matter. Peritonæum and omentum dotted with small white tubercles of the size of grains of sand. Spleen highly vascular, adherent to the diaphragm, and internally and externally studded with tubercles.

Thorax.—Right lung almost converted into brownish-white tubercles, and adherent throughout to the parietes of the thorax. Left lung partly adherent to the mediastinum, pericardium, and pleura costalis ; the surface and internal portion of this lung are studded with small cream-coloured tubercles. Pericardium considerably thickened, and coated internally with a layer of coagulable lymph ; this layer is extended over the surface of the heart, destroying its natural, and giving it a honeycomb appearance. The pericardium contains about an ounce of serous fluid. Heart enlarged to twice its usual size. Right auricle thickened. Right ventricle larger than natural. Left auricle diminished in size, and thickened. Left ventricle thickened and contracted.

COMMENT.

Almost every viscus and lining membrane of the body were here found inflamed or tuberculated ; the consequence was, a serous effusion in the brain, pericardium, and cavity of the abdomen. This, I believe, is rather an unusual occurrence in a child

seven years old. During a period of four months, previously to any appearance of ascites or anasarca, this child was thrice attacked with symptoms which indicated the approach of Hydrocephalus, and thrice the attack was warded off by blood-letting, cathartics, and the establishment of a drain in the vertex.

About three weeks before death the dropsical swellings of the belly and legs came on, which were accompanied by cough, dyspnœa, palpitation of the heart, and by pains throughout the abdomen; finally, by moaning, screaming, and delirium. From these circumstances, and from the absence of the pathognomonic symptoms of Hydrocephalus prior to the ascites and anasarca, we must consider that the effusion into the different cavities was pretty nearly simultaneous.

The morbid appearances discovered in the brain, and in the thoracic and abdominal viscera, may serve to account for the pain, weight, and uneasiness of the head, the cough, dyspnœa, and palpitation, the pain and uneasiness in the abdomen, and the screaming, moaning, intermission of the pulse, &c.

Of the different organs diseased none presented a more singular appearance than the heart, which externally resembled a honeycomb. The right auricle and ventricle were thicker and larger than the left, owing to the obstruction of the lungs, which

occasioned an accumulation of blood in the right side of the heart.

This case shows to what an extent and degree inflammatory actions may subsist, even in youth, in different organs at the same period ; it also shows that a prompt and vigorous employment of our most active remedies can alone obviate their fatal tendency. It may be proper to notice the petechial eruption which supervened to an inflammatory action of some of the most important organs and viscera of the body.

CASE VI.

June 20, 1818. Miss —, Lurgan-st., æt. $3\frac{1}{2}$, was subject from her birth to convulsions, which were excited by coughing, constipation of the bowels, and irritation of mind. The convulsions were sometimes of a few moments, and sometimes from three to five minutes duration ; during their continuance the eyes and mouth were distorted ; the lips, nose, and cheeks, of a purplish hue, and animation seemed at one time to have been suspended ; at another the muscles of the body and extremities were violently agitated.

During the last two years an eruption of the leprous kind appeared upon most parts of the head, body, and limbs ; and latterly the bones of the spine

and the cartilages of the ribs lost their natural firmness, while the skin and muscles of the thumb and palm of the left hand became hard as horn. Throughout the entire of her illness she was subject to cough and dyspnœa, unattended by expectoration; latterly to orthopnœa and palpitation of the heart, and before death to imperfect vision, dilatation of one pupil, and contraction of the other; to moaning, sighing, stupor, delirium, and convulsions; the function of digestion was imperfect, and the excretions were morbid; the pulse varied in strength, frequency, and regularity. About a fortnight before the death of this patient she complained of urgent thirst, and frequently of nausea and vertigo.

The various remedies usually prescribed in such cases were given without any sensibly good effect.

DISSECTION,

BY DR. ADAMS AND MR. J. ADAMS, ATHBOY.

Considerable enlargement of the bones of the occiput. Numerous minute florid vessels are discernible upon the surface of the brain, and at the posterior portion of the cerebrum the veins are preternaturally distended. The substance of the brain, when cut into, exhibits innumerable red points. About six ounces of a pale watery fluid are found in the ventricles and at the base of the brain.

Liver preternaturally enlarged, and in some parts of a vermillion colour; its surface is covered with minute whitish tubercles, giving it a gristly feel to the touch; the same tubercles are seen throughout its substance; they are contained in distinct cysts, are larger than those on the surface, and when cut into, are found to contain a cheesy or fatty nature. The gall-bladder is distended with greenish bile. The spleen is hard, and studded internally and externally with tubercles similar to those found in the liver. Pancreas harder than natural. Mesenteric glands enlarged, and several of them contain matter of a cheesy nature. Right kidney of a rounded shape, and firm, and when cut into a puriform fluid is observed. On the convex side of the left kidney there is a whitish tubercle about the size of a six-pence, which passes some way into its substance. Throughout the entire substance of the right lung numerous tubercles of different sizes. Close adhesions between the pleura pulmonalis and costalis of the left side. Left lung likewise tuberculated, and presents the same appearance as the right; none of the tubercles are in a state of suppuration. Pericardium nearly filled with a watery fluid. Heart harder than natural, and its surface highly vascular. Dr. Adams presented this heart and some portions of the diseased skin to Dr. Macartney, Professor.

COMMENT.

This child laboured under various diseases : chronic Hydrocephalus, pulmonary consumption, dropsy of the pericardium, and tubercles of most of the abdominal viscera. But there was still another disease that demands our consideration, not only on account of its singularity, but of the obscurity of its seat and nature, I mean the sudden suspension of animation to which this child from its birth was subject. The attacks were frequent ; they were excited by mental or bodily irritation, and were accompanied by a peculiar noise in inspiration, similar to that in croup, or perhaps more resembling the pip, a disease to which chickens are liable.

As Hydrocephalus and pulmonary consumption are so very common, and so seldom accompanied by the peculiar complaint just mentioned, we cannot suppose it to arise from these diseases. We may remark that the larynx and trachea were found in a state perfectly natural ; but the heart was preternaturally hard and vascular, and a watery fluid was discovered in large quantity in the pericardium.

Was the suspended animation, in this instance, owing to a temporary paralysis of the heart, or a spasmodic affection of the larynx ?

The effusion detected in the brain serves to account for the giddiness, headach, moaning, vomiting, imperfect vision, and convulsions; and while the cough, dyspnœa, and palpitation, are referrible to the tuberculated condition of the lungs and the dropsy of the pericardium, we may ascribe to the diseased condition of the liver, spleen, and kidneys, the imperfect digestion and the morbid state of the excretions.

Scrofula, in this instance, attacked the skin, cartilages and bones, and almost every viscus of the body; the skin in some parts was red and painful, in others pale, scaly, and disorganized. During the progress of the disease, heat, pain, soreness, or uneasiness, were felt in the affected organs, and were accompanied by the usual feverish symptoms.*

CASES OF RECOVERY FROM SUPPOSED HYDRO- CEPHALUS.

The following I present to the reader as cases of Hydrocephalus in its first stage. I do not, however, positively say that they were so; but from experience and attentive observation I think I am warranted in

* Fourteen cases and dissections of chronic Hydrocephalus were presented by Dr. Mills. Eight have been withdrawn at the request of the Committee of Publication.

asserting that the symptoms here detailed commonly appear in this formidable malady before it proceeds to effusion, when every effort of the practitioner will most frequently prove unavailing.

CASE I.

May 10, 1813. Miss C., Mary-street, æt. 12, of a delicate frame and quick perception, subject to a discharge from the ears, which has ceased for some weeks. For the last fortnight has been complaining of nausea, loss of appetite, headach, prostration of strength and restlessness. Cathartics have been administered without producing any good effect. A younger brother died about a month ago of Hydrocephalus. Pulse 124 and tense; skin hot and dry; thirst; shooting pains in the temples and forehead; pupils dilated, but they contract on the application of light; vomiting; restlessness, moaning and sighing; alternate paleness and flushing of the face; tongue white; bowels constipated.

V. S. 3vi. En. Purg. Pil. ex Cal. et Ex. Col. C.

13th. Blood dense, and slightly buffed; headach relieved by the bleeding; three dejections, yellow and greenish; pulse 114; skin cooler; some rest; no appetite; moaning and sighing; shooting pains in the occiput and forehead.

Hirud. xii. pone aures. Rep. Pil. et En. Purg.

14th. Temporary ease from the application of the leeches; rest disturbed by the headach; frequent sighing and starting; faintishness; slight epistaxis this morning; pulse 110, strong; skin hot and dry; vomiting; throbbing of the temples; two dejections, yellowish; urine high-coloured.

V. S. 3vi. statim. Vespere Hirud. xv. temporibus. Mist. Cath. Habt. Baln. tepid. nocte maneque.

15th. Some rest after the venesection; headach returned in the evening, and was relieved by the leeches; vomiting less frequent; skin softer and cooler; pulse 96; bowels free; urine turbid.

Cal. gr. ii. 3tiis horis. Rep. Baln. tepid.

16th. Return of headach this morning; better rest; pulse 100; slight perspiration after the bath; sighing and moaning less frequent; some return of appetite; fæces yellow and greenish.

Hirud. xii. temporibus. Cr. Cal. M. Cath. et Baln. tepid.

17th. Some alleviation of the symptoms.

Cr.

19th. Gradual amendment.

Cr.

22d. Ptyalism. Convalescent.

Omittr. Cal. M. Cath. p. r. n.

COMMENT.

Hydrocephalus is in every instance a dangerous disease ; insidious in its approach, and often rapid in its progress, effusion not unfrequently supervenes before the alarm is given. Whenever, therefore, there are grounds to suspect its existence, though some of the symptoms be equivocal, a decided line of treatment should be pursued. Now as this complaint is inflammatory or congestive in the first stage, and dropsical in the second, it is clear that at its onset general and local evacuants are principally to be relied on. If these fail dropsical effusion follows, when all remedies in general will be ineffectual ; wherefore Hydrocephalus, properly so called, cannot positively be said to have existed in any case of recovery, but only that inflammatory action or congestion of the vessels which threatened to terminate in Hydrocephalus, or dropsy of the brain.

That the present was a case of Hydrocephalus in its first stage we may conclude from the following circumstances : the delicate and irritable frame, and great sensibility of the patient ; the family predisposition ; the pains of the head ; the dilatation of the pupils, and intolerance of light ; the weaknesses, sighing, moaning and starting ; the restlessness, vomiting and irregularity of the bowels ; the absence of disease in every organ save the brain ; the in-

utility of purgatives; the efficacy of general and local blood-letting; the cessation of a discharge from the ears which had previously subsisted: and, that the first stage of the complaint was inflammatory, we may conclude from the history of the symptoms and the good effects of depletion.

CASE II.

In the month of September, 1813, I visited a fine boy, six years old, who complained of shooting pains in the forehead and occiput, of sickness, retching, and want of appetite; his temples throbbed; his face was alternately pale and flushed; the heat of the forehead, often bedewed with perspiration, was intense; the bowels were confined, and the urine was high-coloured; there was restlessness, sighing and moaning; the pupils were dilated, and very sensible to the application of light; the eyes were suffused, and the countenance was expressive of pain and distress; the pulse varied in strength and regularity, and in frequency from about 120 to 130.

This state of excitement had existed six or eight days, and was preceded by a fortnight's indisposition, which was ascribed to cold and indigestion. Six ounces of blood were immediately taken from the arm; three grains of calomel, mixed with eight of jalap, were given every fourth hour until they

operated, and in the evening twelve leeches were applied to the temples. On the mornings of the three successive days the same quantity of blood was taken from the arm, and every evening the same number of leeches was applied to the temples; a cathartic was daily exhibited, and the tepid bath was employed morning and evening.

By these means a considerable remission of the urgent symptoms was produced, and for four days the parents of the little patient supposed the danger to be past; the complaint, however, then recurred with violence, and it became necessary twice again to have recourse to general and local blood-letting, and to repeat the cathartic and the tepid bath. Three grains of calomel, combined with a small quantity of the watery extract of opium, were given every sixth hour until the gums became affected, and ipecacuanha was added in order to determine to the surface; the fæces varied in colour and consistence, being dark, hardened, greenish, yellow and slimy; and while the cathartic was operating considerable uneasiness was felt in the abdomen, augmented by pressure, and always mitigated by fomentations or the tepid bath. As this child was subject to eruptions of the head and a watery discharge from behind the ears, a drain was established in the vertex by means of lunar caustic, and kept open for nearly seven months. A fit regimen and country

air were recommended, and these have prevented a return of the complaint.*

HISTORY OF HYDROCEPHALUS.

Hydrocephalus may take place without any apparent cause, but is frequently occasioned by blows, falls, wet, cold, sudden changes of the weather; or it may be traced to abscesses in the brain, obstruction in the thoracic or abdominal viscera, a strumous diathesis, &c. Some of these causes operate directly by stimulating the vessels of the brain; others indirectly, by destroying the equilibrium of the circulation. It attacks both sexes, and all ages, but may perhaps, with propriety, be considered a disease of infancy and childhood.

Hydrocephalus presents itself under two forms; the acute and chronic. In the acute, which is the more frequent, it commonly lasts from seven to twenty-eight days; in the chronic from one to six months. This is the usual duration of the complaint, as far as my experience goes; but as in the latter form it may occasionally be protracted to one, two,

* Eight additional cases of recovery from supposed Hydrocephalus were submitted to the Association by Dr. Mills, which the Committee of Publication, for want of space, are reluctantly obliged to withhold.

three, or even sixteen years,* so in the former it may run its course in three or five days.

The cases and dissections of twenty patients who fell victims to acute Hydrocephalus are here detailed. Of these twelve died before they attained the age of six ; seven between their sixth and eighth year ; and one aged twelve.

The cases and dissections of fourteen patients who died of chronic Hydrocephalus are also detailed, of whom seven died before the age of four ; three between seven and eight ; and four between eight and sixteen. From which it would appear that of thirty-four patients nearly two-thirds died before they had completed their sixth year.

The above numbers show a majority of six in favour of the greater prevalence of the acute ; and with respect to the recoveries, seven out of ten laboured under the disease in its acute form.

Acute Hydrocephalus may be divided into two stages, one of excitement, the other of effusion. In the former the disease is curable, in the latter mostly incurable. This division is founded on the nature and progress of the complaint, and gives the practitioner an idea of the morbid state of the brain in

* See my pathological work on the Diseases of the Brain.

each stage, and of the plan of treatment to be adopted.

This disease often attacks the healthy children of healthy parents, but occurs more frequently in the puny or scrofulous, or in children whose parents are scrofulous, debilitated, or worn out by intemperance. There were appearances of scrofula in twenty-two of the patients examined; in two the brain appeared scrofulous; in three the lungs; the liver in four; the mesenteric glands in eight; the spleen in four; and in five the cervical glands. Of the patients who recovered six had no visible marks of scrofula, and the parents of twenty-six were in appearance free from any affection of this kind.

Acute Hydrocephalus is ushered in with symptoms indicative of a disturbance in the cerebral functions. There is uneasiness, pain, vertigo, sense of weight, heat or fullness of the head, attended by languor, chilliness, lassitude on slight exertion, confusion of ideas, and a feeling of weariness, as if arising from a long journey; the pain of the head varies; at one time dull, and confined chiefly to the vertex or occiput; at another acute, and seated in the forehead and temples. In some rare instances pain is not complained of; the head is often bent forward upon the chest, or reclined upon whatever may give it support; there is a throbbing of the temporal or carotid arteries; sometimes the pain

assumes the intermittent type, a circumstance which, as it may mislead the practitioner, deserves particular notice. In the second stage the head is often thrown backwards, and appears stiff and immoveable, indicating a spasm of the muscles of the neck and occiput. The temperature of the body, in the first stage, is raised considerably above the natural standard; that of the head varies, especially the forepart, which in some cases is dry, and of a pungent heat; in others it is alternately hot and cold, or hot and moist, or cold and moist; the eye-balls and forehead are frequently rubbed and pressed by the hand as if to relieve pain; the eye is dull and cloudy, and frequently suffused; a sensation of sand in the eyes is a common symptom; there is strabismus with intolerance of light; red or black specks are often observed floating in the atmosphere, and there is frequent pulling of the eye-lashes. These symptoms are succeeded, in the second stage, by a fixed vacant stare; the pupils are preternaturally contracted or dilated, sometimes alternately; there is a slow rolling of the eye-balls observed through eye-lids partially paralyzed, when it is not unusual to see only the lower portion of the tunica conjunctiva of one eye and a part of the pupil of the other; one or both eye-lids are occasionally swelled, and in some instances there is a puriform or watery discharge from one or both eyes; strabismus is more apparent; there is imperfect vision; objects are seen double, out of place, or of a colour different from

what they really are ; total blindness generally precedes the fatal termination ; picking of the nose is a common symptom, and the fingers are not unusually thrust up the nostrils with violence. The features are generally constricted ; in a few instances they have a bloated appearance, the complexion changes from a rosy to a pale or sallow hue, occasionally a red or purplish circumscribed flush suffuses one or both cheeks ; the lips are pale, contracted, and often surrounded by a dark or bluish circle, and the same is observed under the eye-lids. The senses of hearing and smelling are too acute ; those of taste and feeling vitiated or imperfect ; in the second stage these senses are blunted or lost. The voice at the commencement is commonly hoarse, and words are delivered slowly, and in a low tone ; as the disease advances it becomes shrill and high, and sentences are expressed rapidly and incoherently ; towards the close it is low, muttering and indistinct.

In the first stage the temper is fretful and wayward, easily excited ; the patient is subject, on slight occasions, to violent gusts of passion, which are quickly followed by a state of collapse and lowness of spirits. In those whose minds are still capable of some degree of application, the usual studies and amusements are no longer pursued with any pleasure ; there is a disposition to retirement ; the intellect is clouded, yet occasionally in the delirium

which soon succeeds to this state the imagination brightens, and a lively or sensible idea is expressed in language flowing and perspicuous; and though the memory be impaired, yet lessons formerly learned will occasionally be repeated with facility; and early ideas, supposed to be long forgotten, will be revived and dwelt on with satisfaction.

In the second stage the balance of the mind is completely lost, and all is chaos and stupor.

In the first stage the general expression of the countenance is that of pain of body and despondency of mind. In the second, until stupor comes on, the expression of pain is far more intense; this appears from the knitting of the eye-brows, the grinding of the teeth, the agitation of the muscles of the face and body, the moaning and screaming, the sudden closing and opening of the eye-lids, and occasionally their unusual distention.

An irritative cough is a common symptom in the first stage; the breathing is hurried; there is præcordial oppression, palpitation, and frequent sighing. In the stage of effusion the respiration becomes more laborious, and the sighing more deep and frequent. In the first stage the pulse varies in strength and frequency; at one time full and strong; at another weak; again irregular, communicating to the finger an impression as though the volume of the

artery were diminished in diameter. In the second stage the variations in strength, regularity and frequency, are still more remarkable ; it becomes, moreover, intermitting, and in some instances preternaturally slow.

In the first stage there is nausea, frequent retching, and sometimes vomiting. In the second stage the retching and vomiting become more urgent ; indeed in some instances the stomach rejects every liquid as soon as it is swallowed ; the appetite is diminished, perhaps lost for several days, then it becomes voracious, and sometimes animal food is anxiously called for. This morbid condition of the appetite occurs in the stage of effusion in patients under the age of puberty, and what is remarkable, with regard to infants in the same stage, they snap at the breast with frantic violence. There is generally obstinate constipation, and this is often accompanied with fetid eructations, communicating to the breath an offensive odour. Diarrhœa is a rare occurrence. The fæces assume a great variety of appearance, being dark, pale, yellow, brown, slimy, curdly, ichorous, and greenish, resembling chopped spinage or parsley ; at one time they are free from smell ; at another the smell is acrid, or peculiarly heavy and offensive, like that of hepatic gas.

The urine varies in quantity and quality : when passed during a fit of chilliness, or when there is great cerebral oppression, it is usually copious, light-

coloured, or limpid ; during a period of excitement, or when perspiration is present, it is commonly high-coloured and scanty, depositing a sediment resembling the lees of wine, or grounds of porter. This appearance of the urine depends very much on the condition and quantity of bile floating in the circulation, and thrown off by the kidneys ; sometimes the sediment is thick and slimy, resembling the whites of eggs, and devoid of bile.

The tongue, in the first stage, is often moist and clammy, sometimes dry and parched ; in the second, mostly yellowish on the edges, and red and parched in the centre.

Fugitive pains are occasionally felt in the stomach, the hypochondria, throughout the abdomen ; and they are generally augmented by pressure. There is considerable difference in the colour and temperature of the skin. In the first stage it is sometimes hot, dry, and reddish, often constricted, sallow and cool ; on pressure, however, it communicates to the finger a pungent heat. In the stage of effusion it is often hot, but more frequently cool or cold, clammy, and relaxed. In some cases I have found it endowed with so high a degree of sensibility that the slightest pressure upon any part of the body has given pain or uneasiness. This morbid sensibility seems greatest during the stage of excitement ; sometimes it appears exquisite even in the second stage.

The muscles of the body and extremities are seldom affected in the first stage. In the second we find knitting of the eye-brows and forehead, tossing of the arms and legs, spasms of different parts, and general convulsions of the whole frame. With regard to the sphincters, they are, in the second stage, for the most part paralyzed, and the fæces and urine pass off involuntarily ; yet it happens, in some instances, that there is an obstruction to the flow of urine, arising from a paralysis of the muscular fibres of the bladder.

The reader will perceive that the history of Hydrocephalus now given is extracted from the different cases related. As the brain is the seat of the disease, the symptoms arising from its disordered actions are first enumerated ; the remaining organs being secondarily affected, the symptoms proceeding from the disturbance of their functions are subsequently noticed. This seems to be the natural order of things, in respect to the rise and progress of the disease. We may further observe, that in the history attention has been paid to the two stages of excitement and effusion into which it is divided, and that the symptoms distinctive of each have been as minutely detailed as the nature of the complaint would seem to admit.

DISQUISITION.

I have been led to conclude from a view of the cases above stated, and the appearances presented on dissection, that in Hydrocephalus the brain is the organ primarily engaged ; but because nausea, retching, diminution of appetite, foulness of the tongue, irregularity of the bowels, a morbid state of the excretions, and pain or uneasiness in the hypochondria, are usually observed in the first stage, some have taken a totally different view of the disorder, and have conceived that it originates, not in a disease of the brain, but in a derangement of the chylopoietic viscera.

I am ready to acknowledge that one or more of these symptoms accompany the first stage of Hydrocephalus ; and it is worthy of notice that the same symptoms, and in a more violent degree, likewise accompany the second. In both stages they arise from the same cause, namely, the disordered actions of the brain. This will appear evident to those who attentively consider the rise and progress of Hydrocephalus, which in every instance is ushered in with symptoms indicative of a disturbance of the functions of the brain ; among a variety of which I shall mention a dejected countenance, heat, heaviness or fugitive pains of the head, confusion of ideas, vertigo, low fever, peevishness, pains in the eye-

balls ; at one time drowsiness or stupor, at another liveliness of ideas, and quickness of conception, &c.

These are the first symptoms of Hydrocephalus, the precursors of a derangement of the digestive functions ; they are often indeed overlooked, or if noticed, ascribed to other causes,—to worms, to vitiated bile, to constipation, to violent exercise ; perhaps to whim and caprice.

There are other diseases of the brain in which symptoms of a disturbed state of the digestive organs also present themselves. In apoplexy, for example, in epilepsy, and in typhous or brain fever, we find nausea, retching, want of appetite, vomiting, morbid excretions, &c. But these symptoms are secondary, depending on the diseased actions in the brain, and to be cured by removing the cause by which they were produced.

On the other hand it must be admitted that the brain sympathizes with the disorders of the digestive organs. Hence the pain or heaviness of the head, the disturbed intellect, the impaired vision, the vertigo, or tinnitus aurium, that occur in patients labouring under deranged actions of the stomach, bowels and biliary organ. Cases of this description daily come under the observation of the practitioner.

But Hydrocephalus is not found to supervene to

disorders of the liver or alimentary canal, either in this climate, or where they are much more violent, within the tropics. Nor do we find inflammation or disorganization of the abdominal viscera or ascites, proceed from diseased actions of the brain.

It would appear then, that in consequence of the sympathy and mutual relations subsisting between these organs, the disease of one induces an irritation in the nerves and vessels of the others; and that such irritation, except in extraordinary cases, causes merely a disturbance of the functions of the organ so sympathizing.

We may easily conceive how fatal the consequence must be of mistaking such a complaint as Hydrocephalus; for while directing our attention to the removal of secondary symptoms, the affection of the brain advances, and if effusion take place, becomes for the most part incurable. The time thus lost is for ever to be deplored. Sometimes, indeed, temporary relief is obtained by the use of alteratives and cathartics, and the practitioner indulges a hope that he has performed a cure; but a little time and the delusion vanishes. The deep sigh, the moan, the scream, the fixed stare and the convulsions, announce Hydrocephalus in all its terrors, and so far advanced, as to baffle the skill of the most experienced. In truth Hydrocephalus is a disorder so

insidious and dangerous, as to demand at once the acumen and decision of the practitioner; not a day, not an hour should be lost before we have recourse to the prompt and judicious employment of our most efficient remedies. Even in cases somewhat equivocal we may with reason ask,—Is the physician justifiable in neglecting to have recourse to measures calculated to obviate effusion, more especially when we know that these measures cannot materially injure the patient?

While making these observations I am ready to admit, that in habits predisposed to Hydrocephalus, this complaint may be excited by irregular actions and obstruction in the liver, and the other abdominal viscera. The same, however, may be said of irregular actions and obstruction of the heart and lungs; and, were we called on to decide on this point from the dissections presented to the Association, we must give an opinion in favour of the more frequent combination of Hydrocephalus with the latter than with the former. Nor will this be regarded with surprise when we reflect on the congestion and excitement of the brain that must necessarily arise from an impediment to the free transmission of blood through the heart and lungs.

But considering the subject in all its bearings, it would, perhaps, be more just and philosophic to

view the disorganized, or otherwise morbid appearances of the abdominal and thoracic viscera, rather as accidental circumstances, calculated in some habits to serve as exciting causes, and in others to hasten the development of a disease which, because depending on causes totally distinct, would have run its course more gradually, but with equal certainty.

DIAGNOSIS.

The presence of Hydrocephalus cannot be judged of from one or two symptoms, but from a general survey and minute examination of all the symptoms and circumstances of the case. We should be acquainted with the constitution and habits of the parents of the patient, his temperament and constitution, his previous diseases and their effects, and the past and present state of the secreting organs, more particularly of the skin. This knowledge will aid the practitioner in forming his opinion; but the symptoms and circumstances which appear to me to characterize the disease in its first stage are: a peculiar expression of countenance, indicative of oppression, pain and despondency; frequent sighing; a disposition to retirement; a heat, weight, pain or heaviness of the head, or all these combined; intolerance of light; waywardness and fretfulness; a

low irregular fever ; frequent nausea or retching ; an irregular state of the appetite and bowels ; and the continuance of the disease, notwithstanding the employment of aperients and the remedies usually prescribed in the disorders of children.

We have not the same difficulty in ascertaining the complaint in its second stage, although in this, as in the former, it is only from a consideration of several symptoms that we are enabled to form a correct diagnosis. The heavy sigh, the deep moan, the wild scream, the preternatural dilatation or contraction of the pupils, imperfect or lost vision, delirium, difficult deglutition, paralysis of one hand, arm, or leg, of the eye-lids, and of the sphincters ; the head and neck permanently bent back ; a slow, intermitting, or a rapid pulse ; frequent vomiting and convulsions. These, in my opinion, may be regarded as symptoms characteristic of the stage of effusion.

TREATMENT OF ACUTE HYDROCEPHALUS.

As Hydrocephalus in the first stage is accompanied by an inflammatory action of the vessels of the brain, it is clear that it demands the employment of anti-inflammatory remedies. Of these remedies the most important are, blood-letting, cathartics, antimonials, and

calomel combined with opium ; and these are named according to the order in which they prove most useful. We have, moreover, some auxiliary medicines of considerable value, as, the tepid bath, blisters, fomentations, sudorifics, pediluvium, &c.

In a disease of so dangerous a tendency it is scarcely necessary to state that the loss of a day, perhaps of an hour, may be followed by fatal consequences. The temporal artery, the jugular vein, or a vein in the arm, should be opened, and the blood allowed to flow until some impression is made on the general habit, and until the morbid actions of the vascular system of the brain are modified, or totally changed. That such an effect has taken place may be known by a paleness of the countenance, a shrinking of the features, and a tendency to deliquium ; or by a diminution or removal of the heat, pain, weight, or uneasiness of the head. As soon as this is produced our object, for the time, is accomplished, and the orifice should be closed. Immediately after, or even previous to venesection, brisk cathartics should be administered and repeated at short intervals ; and these I recommend not merely from their emptying the bowels of their contents, but because they act on the exhalants of the entire alimentary canal. Thus we lower the tone of the heart and cerebral vessels, and promote a more equal distribution of the blood.

Remissions and exacerbations daily take place in this disorder ; they occur at irregular periods ; most commonly the remission is observed during the morning, and the exacerbation in the evening ; but at whatsoever time the exacerbation may return, let it never be forgotten that blood is again to be detracted, and active cathartics are to be again exhibited, until some impression is made on the disease. By these measures, promptly and judiciously executed, there is reason to hope that in the course of three or four days the excitement of the brain will be considerably abated, or perhaps removed.

I have mentioned that blood may be abstracted from the temporal artery, the jugular, or from a brachial vein, but it sometimes happens that blood cannot be taken from any of these vessels ; in that case our chief dependence is on cupping, or what I generally prefer to it, the application of leeches to the temples, the vertex, and occiput, or behind the ears ; they should be applied in large numbers, and the flow of blood encouraged until the morbid actions in the brain are arrested or removed ; and we may infer that some impression has been made on the complaint if we find a tendency to deliquium, a weakness or fluttering of the pulse, and a shrinking of the features, symptoms often observed to follow the application of leeches, and which show the power of local blood-letting over the action of the heart and

arteries. The same method of depletion should be had recourse to on every return of excitement.

Nor do I mean to limit the employment of leeches to those cases only where blood cannot be abstracted by the lancet. My opinion, on this point, may be collected from a view of the cases detailed, in which leeches were generally used immediately after venesection, in order to postpone the period of exacerbation, or break the chain of diseased action. I was led to adopt this plan of treatment from observing that these two modes of drawing blood, when successively employed, made a greater impression on the disease than either of them when singly had recourse to.

As soon as a check has thus been given to the disorder of the head by the action of these several remedies, some benefit is to be expected from the judicious administration of calomel with opium. The good effects of a combination of these remedies seem to depend on their power of equalizing the circulation, increasing the secretions, and exciting the actions of the cutaneous vessels, in consequence of which the congestion of blood in the brain, or in any other organ, is diminished or removed. The dose must be regulated by its effect, the constitution of the patient, and the violence of the attack. Although, generally speaking, it is difficult to induce ptyalism in this complaint, yet as calomel in

some cases unexpectedly attacks the salivary glands, and produces ulceration and mortification of the fauces, I prefer giving it at first in small quantity, which may be increased at pleasure. In acting thus cautiously we avoid the painful consequences sometimes observed to follow its exhibition.

The efficacy of opium, united with calomel, depends, in some measure, on its checking the tendency of the latter to run off by the bowels or salivary glands; so combined, it often procures tranquil rest, determines to the surface, and allays that painful irritation of the nervous system and of the mind and body, which so uniformly accompanies this disease. I cannot bring to my recollection a single instance in which this remedy, when judiciously exhibited after depletion, was followed by disagreeable consequences; and in cases unaccompanied by great irritability of the stomach, its powers are occasionally increased by the addition of small quantities of ipecacuanha, or antimonial powder.

While speaking of opium I beg leave particularly to recommend to the consideration of the practitioner the "Watery Extract," a preparation which procures rest, diminishes pain and irritation, and diffuses throughout the frame an agreeable sensation; at the same time it is devoid of any narcotic or nauseating quality, and does not cause vertigo, pain, or a sense of fullness in the head, symptoms so often

observed to follow the exhibition of the Thebaic Extract, or the common tincture.

Among the auxiliary remedies the tepid bath holds the first place; its use is often attended with manifest advantage; indeed in some instances the benefit resulting from its employment is as unexpected as it is extraordinary; I have seen it at one time reduce the intense heat and dryness of the skin, at another produce a genial warmth and moisture of the surface, and thus allay irritation, diminish the action of the heart and arteries, and check, for a while, the violence of the disorder. The tepid bath will prove most serviceable after the employment of blood-letting and cathartics; it should be used twice or thrice daily, according to the urgency of the symptoms, and the effect produced. The period of immersion is from fifteen to forty minutes, about an hour before which the patient should take a dose of calomel and opium, and while in the bath small repeated draughts of tepid whey or barley-water, in which is dissolved tartrate of antimony,* in doses so minute as not to excite nausea or

* Since this paper was written, (1821,) I have given tartar emetic more frequently, and in larger quantity than formerly, and with decided benefit, especially in the acute form of the complaint. This active agent possesses, in many instances, the power of diminishing the tone and activity of the vessels of the brain and heart, and thus of breaking the chain of diseased action. This appears from its effects: a sinking of the pulse, collapse of the

vomiting ; and during this period friction must be constantly applied to the body and extremities with the hand or a soft brush. Blisters are never to be employed previously to depletion, or while there is a high degree of excitement, for under such circumstances, by their stimulating powers, they rather tend to aggravate than diminish the disease. On some occasions they are useful when applied to the head or its vicinity, chiefly on the principle of counter-irritation, and partly by the fluid abstracted from the cutaneous vessels, whereby the congestion of the interior is in some measure diminished. Blisters sometimes afford relief when applied between the shoulders, or along the spine, owing, in a great degree, to the connexion of the spinal marrow with the brain, and instances occasionally occur where evident advantage proceeds from their application to the extremities. Now, as in these cases I have observed perspiration to follow their employment, the benefit hence resulting seems to me to proceed from their action on the vessels of the surface, and

features, tendency to delirium, accompanied by cold perspiration, and a diminution of the headach, and throbbing of the temples. I was induced to make a trial of this remedy in Hydrocephalus from witnessing its good effects in maniacal delirium and other disorders of the brain, arising from a high degree of vascular excitement. The dose varies from one-fourth of a grain to two, four, five, or even ten grains, dissolved in water, to which may advantageously be added, when the stomach is irritable, small doses of the tincture of opium.

the power they thus possess of restoring the equilibrium of the circulation.

Here I should not omit to suggest to the faculty the use of the antimonial ointment; the happiest effects occasionally arise from its application to the vertex or occiput, especially in cases which supervene to repelled scabies of the hairy scalp; it is quick in its operation, and produces a pustular eruption similar to the scabies; this is often attended with a copious discharge of puriform matter, which is followed in some instances by almost instantaneous relief of the painful and alarming affection of the head.

I have made no mention of a remedy much extolled by some practitioners, I mean a caustic issue established in the vertex, for I never witnessed any benefit to result from its employment in acute Hydrocephalus, nor indeed is it reasonable to expect that in a disease which often runs its course in a few days, benefit can be derived from a remedy which requires the same or a longer period before it takes effect.

DIAGNOSIS AND TREATMENT OF CHRONIC HYDRO- CEPHALUS.

Certain symptoms and appearances so frequently accompany chronic Hydrocephalus, that they may

be considered as characteristic of this form of the complaint, and as distinguishing it from the acute. With these symptoms and appearances it is of importance to be made acquainted, as a knowledge of them may lead the practitioner to a more rational and successful plan of treatment.

Chronic Hydrocephalus, in its mode of attack, is more insidious than the acute, and is slower in its progress and development. Vertigo, confusion of ideas, heaviness, or a dull pain in the head, and stupor, attended by a pallid countenance and shrunk features, usually usher in this form of the complaint; whereas, in the first stage of the acute Hydrocephalus, we find lancinating pains of the head, throbbing of the temples, suffusion of the eyes, or intense heat of the forehead. In chronic Hydrocephalus the intellect is more clouded, and the expression of countenance is generally bewildered, fatuous, or like that of a person half intoxicated. In the acute, on the contrary, the countenance is often expressive of quickness and intelligence, the voluntary powers are more enfeebled, and the vital functions more oppressed. We may likewise notice a considerable difference in the temperature of different parts of the body; the forehead and extremities being, in the chronic, often cold or damp, while the trunk is little, if at all, above the natural standard; whereas in the acute the heat is more intense, and

more equally diffused. Further, we find on dissection the turgescence of the veins and sinuses of the brain much greater, and the effusion of a watery fluid between the arachnoid membrane and pia mater in larger quantity in the chronic than in the acute. The chronic, moreover, is oftener found accompanied by disorganization of the substance of the brain or its membranes.

From what has now been stated it would appear that acute Hydrocephalus is distinguished by a high degree of arterial excitement, and the chronic form by venous turgescence of the brain, an imperfect development of disease, and an unequal distribution of the blood ; but as in both forms several modifications and varieties may be traced, due regard must be paid to the peculiarities of every case, as these must necessarily require some modification of the mode of treatment ; still, however, the curative process is to be governed by the same general principles, and the same means are to be employed, regulated by the urgency of the symptoms, and the age and constitution of the patient. Blood-letting, general and topical, cathartics, mercurials, opiates, &c., are the principal means to be employed in chronic as well as in acute Hydrocephalus ; but as in the latter the danger is more imminent from the high degree of excitement with which it is usually accompanied, the most efficient remedies are to be employed with promptitude and decision. In the

chronic, on the contrary, the disease is slower in its progress and development; and as the symptoms are less urgent, measures of a milder nature are commonly required; I say commonly required, because cases of chronic Hydrocephalus occasionally arise in which the system is so overpowered by the venous turgescence of the brain, that, to save the life of the patient, recourse must be had to the most decidedly active measures.

I shall only further remark, with regard to the treatment of chronic Hydrocephalus, that permanent benefit is to be expected from the early establishment of a drain in the vertex or its neighbourhood, and that mercury should be administered more largely, but opium more sparingly, than in the acute form.

PROPHYLAXIS.

On the important head of prophylaxis, or on the mode of treatment calculated to obviate the occurrence of Hydrocephalus, a few general, and some particular observations are now requisite. Our great objects are, to maintain the equilibrium of the circulation, and preserve the viscera in a healthy condition; this is to be done by supporting the actions of the cutaneous vessels, and preserving a healthy state of the secretions by the establishment of issues,

the use of cold and tepid baths, exercise, warm clothing, proper diet and medicines, and living in a pure air. But on those points it may be proper to dwell somewhat at large.

Issues may be regarded as active agents in diminishing congestion and excitement of the vessels of the brain; they are particularly serviceable when the patient has been subject to headaches, vertigo, tinnitus aurium, or other symptoms indicative of fullness or increased action of this organ. They likewise prove useful in cases where an established discharge from the ears, nose, or vertex, has been suddenly or imprudently stopped, or where eruptive diseases of the hairy scalp of long duration have been improvidently repelled. But in all other cases an issue is, perhaps, a remedy of a doubtful nature, and may, in weakly habits, by the drain it occasions, reduce the tone and vigour of the constitution, and thus rather tend to produce than prevent the disease.

If the insertion of an issue be resolved on, it appears to me that it will be most efficacious if established in the vertex by means of caustic; in some instances the object has been attained by its insertion in the occiput, nucha, or arm. It is difficult to fix on the precise time when an issue should be dried up, whether at the expiration of one, five, or ten years; this must depend on the constitution

and age of the patient, and on the degree of predisposition to the complaint. Some decided improvement in the state of health, a change of constitution, or a change of habits and ideas, should take place previously to the stoppage of a drain, by which every function of life has been more or less influenced.

Cold and tepid baths are, in many instances, well calculated to equalize the circulation and prevent congestion, by inducing more healthy secretions, and giving a degree of activity to the vessels of the surface ; but in some constitutions reaction does not follow the use of the cold bath, in which case it lowers the tone of the cutaneous vessels, and depresses the power of the system at large, and thus tends to promote congestion and excitement of the different viscera.

In delicate habits, where the cold bath is not admissible, recourse may be had to the tepid sea-water bath, which often produces all the good expected from the cold. This bath may be used every second or third day, and the patient may remain in it from fifteen to thirty minutes ; meanwhile the body and extremities should be constantly rubbed with the flesh-brush ; in situations remote from the sea, fresh-water, strongly impregnated with rock-salt, will answer instead of sea-water. In a variety of

instances the shower-bath, cold or tepid, according to circumstances, will prove highly efficacious.

During the winter and spring flannel or shamois leather should be worn next the skin, for it is absolutely necessary to protect the body from the depressing effects of cold and moisture ; and to support insensible perspiration the extremities must be kept warm by fleecy hosiery stockings, and cork-soled shoes ; or if these be not sufficient, even oiled silk may be worn over the stockings.

The diet ought to be perfectly plain, simple, and easy of digestion. For children, bread and milk, biscuit, potatoes, panado, gruel, sago, arrow root, light broths and animal jellies, according to the powers of the stomach. On this head I know but of two rules which are to hold generally good with regard to children : the first is, not to persevere in giving any kind of food which is found to disagree with the stomach ; and the second, never to allow a full meal, nor long fasting. When the powers of digestion are much enfeebled, wine, in small quantity, mixed with the food, may occasionally be given with advantage. With respect to the diet of those more advanced in life, all meats, dried, highly seasoned, stewed and baked, are to be avoided ; also, pickles, salads, pastry, and melted butter ; none but meats plainly dressed should be brought to table, and roasted are perhaps preferable to boiled ; they should be

tender and juicy, and rather rare than overdone. Pure water, generally speaking, is the best table-drink ; light ales, pyrmont, soda or Seltzer water, are sometimes found palatable and refreshing ; and generous wine, in small quantity, diluted with water, is good to assist digestion and check fermentation.

To children of strumous habits mild aperients of a warm antacid quality may occasionally be given with advantage ; in some cases the digestion will be materially improved by proper doses of rhubarb with the hydrargyrus cum cretâ, or the hydrargyrus cum magnesiâ. At all ages great attention is due to the chylopoietic viscera ; the condition of the excretions should be carefully watched, and any deviation from their natural appearance immediately corrected. During the use of aperients, or after their exhibition, beneficial effects are sometimes observed to follow from the use of light aromatic bitter infusions, but still more from the sulphurated, or chalybeate springs.

The pure air of the country is indispensably necessary in every instance of predisposition to Hydrocephalus, and whether the place of residence should be near the sea or inland must depend on the age, strength, and feelings of the patient ; the house should be dry and warm, situated on a gentle declivity, and built on a gravelly soil, at a proper distance from lofty mountains, low swampy grounds, or

stagnant pools and lakes, and the apartments should be lofty, large, and well-ventilated. The impure air of a populous foggy city, of crowded heated rooms, and of ill-ventilated offensive manufactories, is to be sedulously avoided. Air so contaminated oppresses respiration, and lowers the tone of the heart and cutaneous vessels, and thus gives rise to congestion and irregular actions in the brain and other viscera. A temporary residence in a more genial climate is sometimes found expedient; and when the nervous system is morbidly sensible to external impressions, such a change is necessary in order to avoid the painful irritation of body, and the depression of spirits produced by the cold moist air, and the sudden transitions of weather, for which our country is so remarkable.

The reader will perceive that many of the observations now made under the head of prophylaxis, are more applicable to the period of youth than infancy; for so strong in some habits is the predisposition to this disease, that a change of climate and a strict adherence, for years, to a particular diet and regimen, are required to alter it.

It is now proper, for obvious reasons, to say a few words in respect to parents, who from sedentary or luxurious lives have produced a sickly offspring. In such cases our exertions should be directed to alter and amend the constitution; an object, per-

haps, to be best attained by a total change of former habits and influences. With this view, sea-voyages may be recommended, long or short, as may be deemed expedient ; or travelling into countries whose climate, language, and customs differ from our own ; where, by adopting more regular habits, and by a change of air, diet, and associations, the mind and body of the parents will be invigorated ; and then there will be ground to hope that their future offspring will be more healthy, and consequently less predisposed to Hydrocephalus.

As a prophylactic, in cases of infants, what does the reader think of the use of breast-milk, and no other kind of food for two or three years ? Suppose a succession of young, healthy, mild-tempered nurses, each to remain with the child six or eight months. I have witnessed good effects from this plan of treatment in two families, where the children died of Hydrocephalus before the age of two years.

France, Italy, Spain, the shores and islands of the Mediterranean, are the usual resort for invalids and travellers for the recovery of health and the improvement of the mind. Whether these objects are more attainable by a residence in those countries, or in the south of England, will best be determined by a review of the advantages and disadvantages presented by each. When then we reflect on the

neat, well-furnished, and warm houses of England, and on the dirty, ill-appointed, and cold habitations of our more southern neighbours, on the inconveniences, the annoyances, and often the dangers of foreign travelling, on the benefit resulting from the society of friends and relatives at home, and on the want of these while abroad, the reader will perhaps agree with me in thinking that for an invalid the south of England, with all its comforts, is preferable to the south of Europe with all its discomforts. As to climate, I grant a preference is due to southern Europe; the air is drier and warmer, the sky more clear and serene, and the vicissitudes of the weather are not so sudden. Still it may be asked, what patient can bear with impunity the sirocco, or the bise? And may not the disadvantages of cold, fog, and moisture, be counteracted in a great degree by remaining occasionally within doors in a well-regulated temperature? While on this subject I would observe, that if the south of Ireland afforded as good accommodation as that of England, the climate would prove equally salubrious.

I have recommended foreign travel to parents who from indulgence in vicious habits at home, or from some latent constitutional taint have produced a puny offspring. Here again the question arises as to the fittest place of residence. To Switzerland I see no objection; on the contrary, the pure and simple manners of its inhabitants, the grandeur of

its mountains, and the romantic beauty of its lakes and valleys, are calculated to purify the heart and enlarge the understanding; moreover, its keen dry air serves to brace the nerves and invigorate the constitution. But in France, Italy, and Spain; on the shores and in the isles of the Mediterranean, what do we see? Vice and luxury, misery and discontent; man degraded, enslaved, demoralized. And is this the quarter to which we are to send our youth to acquire lessons of wisdom or virtue?—Is this the quarter to which we are to send the distempered habit to recover health of body or health of mind?

Why not then turn our attention to a country where all is young and fresh, and beautiful and vigorous; where the people are free, happy, virtuous, patriotic and hospitable; a country which presents the sublime in the magnitude of its lakes and rivers, in the grandeur of its forests, mountains, cataracts; whose plains and gardens afford to man all his wants and wishes, every thing to please the eye and gladden the heart. There the traveller may acquire knowledge and virtue, health and strength. Need I say that the country to which I allude is the United States of America?

But should foreign travel not be agreeable or convenient, the country gentleman may remain at home, and while employed in the active pursuits of agriculture, and in improving the condition of his

tenantry, he will find what he had lost, or perhaps had never enjoyed,—health, peace, and competence.

CONCLUSION.

I shall now conclude this paper by observing, that during the last twelve years I have been collecting, with diligence and anxiety, the cases and dissections of Hydrocephalus now presented to the reader ; though numerous, and in some of their features bearing a common resemblance, yet each has something peculiar and interesting by which it is distinguished, and the united whole tends, I should hope, to throw additional light on the pathology of the disease, and to free it from some of the obscurities in which it was previously involved.

When the reader examines the nature of the present undertaking, and is informed that every case was taken from my own private practice, and that I was present at every dissection, one excepted, he will readily appreciate the labour and anxiety attendant on such a pursuit, the difficulties I had to encounter, and the prejudices and feelings to combat and appease. In truth, I should have shrunk from an inquiry, at once painful and laborious, had I not been impressed with a conviction that through this channel alone I could become acquainted with

the seat and nature of the disease, and a just and rational mode of treatment.

For the benefit of those who may be desirous to pursue the same path, with regard to Hydrocephalus, or any other complaint, I shall beg leave to state, in a few words, the plan I pursued. During my attendance on each patient I took notes daily of the case; if death followed I noted, assisted by the surgeon, the morbid appearances; on my return home, while the subject was fresh in my memory, I made a fair copy of the case and dissection, wrote the observations to which these gave rise, and the names of the surgeons by whom the bodies were examined.

To these gentlemen I now beg leave to offer my unfeigned thanks; but to Mr. Macnamara are due my particular acknowledgments, not only for his willingness at all hours to volunteer his services, but for the valuable information I derived from his intimate acquaintance with the changes produced by disease in the different organs of the body.

ON
INTERNAL INFLAMMATION OF THE EYE
FOLLOWING
TYPHUS FEVER.

By ARTHUR JACOB, M.D.,

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HOSPITAL, PITT-STREET.

Read Jan. 7, 1828.

THE occurrence of a local inflammation of specific character, as a consequence of fever, is a fact of importance not only to ophthalmic surgery, but to pathology generally.

That iritis, or internal inflammation of the eye, is one of the sequelæ or consequences of that form of fever which afflicts this country, was first established by Mr. Hewson in his work on Venereal Ophthalmia, and the fact is now fully admitted by the profession in this city. Having myself met with seventy or eighty examples of this disease within the last year, I am induced to communicate the results of my inquiries respecting it.

I am unwilling to apply the term *iritis* to this affection, because I do not believe that the iris is the part primarily or exclusively attacked; but on the contrary, that all the internal parts of the eye participate in the inflammation, especially the retina, as proved by the symptoms to be presently detailed. Even in syphilitic *iritis* the inflammation is not confined to the iris, but extends to the membrane of the aqueous humor, the sclerotic coat, and cornea, and if not checked, finally, to the lens, vitreous humor, and retina. The use of the term has the effect of directing the attention of the practitioner to the iris, which bears a great deal of inflammation without destruction to the organ, and withdrawing it from the retina, which bears very little without permanent injury to vision. I therefore call the disease *Internal Inflammation of the Eye*.

That this inflammation is to be considered one of the consequences of fever I do not entertain a doubt, because in all the cases which I have met, the patients had suffered from fever during the preceding six or eight months, and in one or two instances only the previous existence of fever was doubtful. The conclusion can be disproved only by supposing that so great a proportion of the population had gone through fever within that period, that few had escaped to afford examples of the disease occurring independent of such cause. My experience leads me to believe that this affection occurs much more

frequently in young than old persons ; I have no case noted of its occurrence at a later period of life than forty-five ; and of thirty cases in which the ages have been noted, three only are above twenty-five. I believe also that it is much more frequent among the poor than the rich, and therefore is probably to be referred to exposure to cold, and to insufficient nourishment after recovery. It likewise may perhaps be considered to arise more frequently among females than males ; neither are children exempt from it, as I have met with cases at three, five, and seven years of age. I have not found that the practice of any particular trade disposes to it. The inflammation, in the majority of the cases seen by me, made its appearance within six weeks or two months after recovery from fever ; in some instances, however, it appeared before the patient left the hospital, and in others not for four, five, or even eight months. Both eyes are seldom affected ; I do not think that I have met a case in which more than one was attacked.

The inflammatory symptoms are generally preceded by those defects in vision which are considered to arise from disease of the retina, such as *muscæ volitantes*, clouds, and luminous coils or stars. These, in most instances, had not existed for more than six, eight, or ten days previous to the appearance of inflammation ; but in some they had existed for two months, commencing immediately after re-

covery from fever. The accounts given of these first symptoms were, that the sight began to fail so as to disable the patient from working at his trade ; that a black fog, cloud, gauze or scum, came before the sight ; that vision became dim, spread, or dazzled ; or that there were motes, threads, stars, or flies dancing or swimming before the eyes. The inflammatory stage is distinguished by the increased vascularity, the cloudiness of the transparent parts, alterations in the condition of the iris, pain, intolerance of light, increased secretion of tears, and defect of vision.

The vascularity produces the same appearances which have been observed in other forms of internal inflammation and iritis ; at its commencement a pink zone surrounding the margin of the cornea ; at a more advanced period vessels converging from the lateral parts of the globe to the cornea. The pink zone in the sclerotic, or tunica albuginea, arises from the enlargement of the capillary vessels of the sclerotic at this part admitting red blood, which vessels in a state of health, we conclude, carry transparent blood only. The larger distinct vessels, which appear at a more advanced period converging to the circumference of the cornea, and obscuring the white of the eye, are the branches leading to those capillaries, and as they do not ramify so extensively, or form the same reticulated arrangement as those of the conjunctiva, they afford a good means of distin-

guishing inflammation of the globe, or its parts, from inflammation of the conjunctiva. Diagnosis, founded upon the condition of the vessels alone, is not however to be relied upon, because there is frequently so much conjunctival inflammation accompanying the internal derangement that this vascular arrangement is obscured. It is to be remembered that this must also be the condition of the vessels in inflammation of the sclerotic or cornea, from whatever cause it may arise. I have repeatedly observed it in wounds, ulcers, and abscesses of the cornea.

In this inflammation the transparent parts are rendered more or less clouded or opake; the cornea especially has its margin or circumference almost always of a whitish or grey appearance, presenting an opake circle resembling the *arcus senilis*. The anterior chamber of the eye appears clouded, independent of the opacity of the cornea, arising probably from thickening of the membrane of the aqueous humor; this cloudiness is sometimes general, sometimes it presents a muddy patch behind the cornea, as in syphilitic iritis. In the worst form of the disease the lens itself becomes partially opake, reflecting light falling obliquely upon it, and presenting an opaline amber colour; indeed it is in this way I have observed vision to be destroyed where the disease has been fatal to the organ. The hyaloid membrane of the vitreous humor may possibly participate in this opacity.

The iris is always altered in colour, the brilliancy of its tints being totally lost ; it never, however, acquires the decided yellowish green observed in syphilitic iritis ; neither have I observed the abscesses or tubercles, usually called globules of lymph, which characterize that form of inflammation ; purulent matter is however occasionally secreted in the anterior chamber of the aqueous humor, constituting hypopion, or unguis. I have not observed that the secretion of purulent matter was a consequence of more intense inflammation ; on the contrary, I have seen it in very mild cases, and even where the pupil contracted on exposure to light. The pupil is generally slightly irregular, but I have not observed that it contracts adhesions to the capsule of the lens, or that it becomes closed as in iritis ; in many well-marked cases I have found it contract on exposure to light with considerable activity.

The patient generally complains of a stinging or aching pain darting to the temple or nose, but in many instances there is little or no suffering from this cause. Intolerance of light, and even severe pain on exposure to any strong glare, is almost always present. The answer to the first question respecting the pain is, that it is produced by the sun, the candle, or the fire. When there is much intolerance of light there is considerable secretion of tears, which produces a distressing scalding sensation.

Vision is in all cases much impaired ; some cannot read print of moderate size, others cannot distinguish large capital letters, others are unable to see a key or other large object held at a short distance from the eye, while others can only distinguish light from darkness. I have not observed that the degree of injury to vision was proportioned to the extent of the inflammation ; the cases of mildest appearance being sometimes attended by the most defective sight. The patient can seldom distinguish all the prismatic colours, deep blue and green generally appearing black.

The following history of one well-marked case affords a summary of the preceding detailed symptoms. The patient states that he recovered from fever two months ago, and returned to work at his trade as usual ; that about three weeks ago his sight became dim, his work confused by motes or flies floating before his eyes, and that a few days ago the eye became red and sore. He complains of pain in the eye-ball, extending to the temple, and suffers from exposure to sun-shine, fire, or candle. He cannot read small print, or tell the hour by a watch. His eye feels hot, and there is a considerable discharge of scalding tears. The sclerotic is highly vascular, and the larger vessels converge to the circumference of the cornea, which is surrounded by a pink zone. The cornea is slightly clouded, the margin forming a whitish circle resembling the

arcus senilis. The anterior chamber of the eye appears clouded, independent of the cloudiness of the cornea. The iris is altered in colour; the pupil is slightly irregular, acts sluggishly, or is nearly immoveable. The crystalline lens appears clouded, of an amber tint, and opaline appearance; and vision is permanently impaired, or totally lost, with dilated pupil, and other symptoms of perfect amaurosis. When the inflammation subsides, and the disease terminates favourably, the symptoms gradually disappear; the purulent matter, if secreted, is absorbed, and the iris recovers its colour; the pupil becomes regular and active, and vision is perfectly restored. An imperfect recovery is sometimes obtained, leaving defective vision, *muscæ volitantes*, and other amaurotic symptoms.

The treatment of this inflammation of the eye is not attended with much difficulty. Bleeding, locally or generally, in proportion to the urgency of the symptoms; blistering, where there is much pain or intolerance of light; purgatives, antimonial medicines, and opiate stupes, are obvious means of relief. I am in the habit of using the extract of belladonna very freely, not only in this form of inflammation, but in every other, and more especially in syphilitic iritis, where there is so great a tendency to closure of the pupil and adhesion of its margin to the capsule of the lens. In the contracted state of the pupil its margin, at least when

inflamed, is in contact with the capsule ; but when dilated it is altogether detached from it, and consequently cannot adhere. It must however be admitted that the iris, when much altered by inflammation, is not affected by the belladonna ; but even under such circumstances its use is not attended with any disadvantage. But it is not from its effect on the pupil alone that the extract of belladonna should be applied ; very decided relief is obtained from its application in those cases where there is deep-seated pain, extending from the eye-ball to the temple, and especially in rheumatic inflammation. It may be used, as recommended by Beer, in the form of ointment, rubbed in upon the temple, (half a drachm of the extract, with an equal quantity of mercurial ointment every night,) or the extract alone, softened with water, and daubed over the lids and brow, and kept moist for one or two hours with a light fold of old linen wetted every ten minutes, may be preferred. I do not, however, by any means recommend that the surgeon should depend upon these remedies alone ; on the contrary, I believe that they will prove ineffectual in the majority of cases, and therefore we must have recourse to mercury, which has been found so valuable a resource in other cases. In my own practice I have found the relief from the use of mercury so certain and decisive, that I have trusted to it almost exclusively, with the assistance of the belladonna. I have generally found

that two grains of calomel with a quarter of a grain of opium, three times a day, answered every purpose ; and in the majority of cases I produced the necessary mercurial action, as marked by tenderness of the gums, in eight or ten days, by the use of three, four, or five grains of blue pill alone, three times a day ; and if the pain should be severe, combining hyoscyamus or belladonna with the dose taken at bed-time.

I have heard that the sulphate of quinine has been administered with advantage in those cases ; but as my experience of its efficacy is not considerable I cannot speak of it with any certainty. In two cases which I met after the inflammation had subsided, and in which vision was as much impaired as if no remedies had been adopted, bark in powder had been administered for ten days. I gave trial to the sulphate of quinine myself in four well-marked cases for eight days, but finding no relief, had recourse to mercury, which effected a cure in the usual time. I have no doubt that many of those cases, when the inflammation is not severe, recover without any treatment. I have met with several complaining of *muscæ volitantes*, and other slight amaurotic symptoms, who, upon being questioned, stated that they had slight sore eye after recovery from fever. Of the value of sulphate of quinine as a remedy in most forms of ophthalmia, when oc-

curing in debilitated or scrofulous subjects, or after long confinement in an unwholesome room, or after the injudicious use of mercury, I am fully aware; and I know of no curative means which merit more the attention of the ophthalmic surgeon.

CASE
OF
EXTREME DIFFICULTY OF RESPIRATION
SUCCESSFULLY TREATED
WITH
HYDROCYANIC ACID.

By MICHAEL RYAN, M. D.,

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ING MEMBER OF THE ASSOCIATION OF THE FELLOWS AND LICENTIATES
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Read Nov. 6, 1826.

Mrs. C., æt. 23, married, and nursing at the time, retired to rest in perfect health on the night of the 25th of September, 1825. Her eldest child having been suddenly taken ill in the course of the night, she sat up in her undress, and exposed herself in that state, at the outer door of her house, to the chilling influence of the night-air, when she was almost immediately seized with pain in the chest and extreme difficulty of breathing, so urgent as to threaten almost instant suffocation. At three o'clock

next morning she was bled to eight ounces without relief.

At two o'clock, P. M. of the 26th, I was called to see her. I then found her sitting up in bed, her elbows resting on her knees, her breathing very laborious, with inspirations long, expirations short, terminated by moans; face pale; lips livid; features relaxed; eyes glassy; no pulse could be felt at the wrist; heart's action feeble and indistinct; hands and feet covered with a cold clammy perspiration. Speech and intellect unaffected.

The symptoms were so violent that her case appeared quite hopeless; first, because the lancet could not be used, as the circulation had nearly ceased; and secondly, because death was to be apprehended before a blister could take effect. Some expedient more immediate in its action was therefore to be adopted.

From repeated trials of hydrocyanic acid I felt convinced that it was a most efficacious remedy in relieving difficult respiration and oppressed circulation, and that therefore it was peculiarly adapted to the present case; and as the symptoms were so extremely urgent, I determined to push the use of the acid until it produced most sensible effects. Accordingly six minims of the acid, as prepared by Scheele, were mixed in two ounces of distilled water,

with one drachm of compound spirit of lavender. Of this mixture she was to take half an ounce every ten minutes, until her breathing was in some manner affected. I also directed that if any relief were obtained by the first, second, or third dose, the medicine should not be repeated oftener than every half hour, and that it should be discontinued altogether, and the administration of a little brandy substituted if sudden weakness, headach, or fainting should supervene.

So hopeless was this case, in my opinion, that I thought it most probable that the woman would be dead before the medicine could be administered.

Four o'clock, P. M. The medicine has been taken as directed; the breathing is much easier, and the patient is altogether wonderfully relieved. She complains of some debility. Six o'clock, P. M. Is not so well as at last report; complains much more of weakness. Let her have some brandy in small quantities during the next hour. Seven o'clock, P. M. Pulse very weak, small, and frequent. Says she experienced the greatest relief from the mixture, which is all taken; but the shortness of the breathing has been increasing for the last two hours, and is now as violent as at two o'clock, P. M. Her countenance expresses extreme anxiety. On the whole her case seems perfectly hopeless. Let her have

eight minims of the acid with two grains of tartar emetic in two ounces of distilled water, half an ounce to be taken every ten minutes as above directed.

27th. Eight o'clock, A. M. Took four doses of the medicine in the interval between twenty minutes past eight and nine o'clock last night, when considerable ease was obtained. The last dose was taken at ten, soon after which her body recovered its natural temperature; sleep also supervened, and continued till this morning. At present countenance natural; breathing easy; no pain in any part of chest; pulse 100, stronger and fuller. The mixture has acted on her stomach and bowels, though she had previously taken two ounces and a half of castor oil without effect. She wishes for broth, and considers herself free from complaint.

In this case it appears that in the space of eight hours the vast quantity of fourteen drops of hydrocyanic acid was exhibited, and with decided advantage. The acid was obtained from the establishment of Messrs. Stanley and Co., Dublin, and was prepared according to the formula of Scheele, and I saw both my prescriptions faithfully compounded. Had I not considered the present case perfectly hopeless, I would not have pushed the acid so far.

This remedy is extremely dangerous, and re-

quires the closest observation of the practitioner. The use of the most powerful stimulants should immediately be had recourse to when its deleterious effects on the constitution are perceptible. In conclusion I beg to state, that I have used the hydrocyanic acid in numerous cases of severe pulmonary disease, in functional and organic diseases of the heart, and in violent cases of asthma, dyspnœa, and orthopnœa, with the most marked and decided advantage.

APPENDIX

TO

“ CASES INTENDED TO ILLUSTRATE THE APPLICATION AND
UTILITY OF THE STETHOSCOPE.”

BY RICHARD TOWNSEND, A. B., M. D.,
&c. &c. &c.

Read Nov. 5, 1827.

A FEW months since I had the honour of reading to this Association the history and dissection of a case of pneumo-thorax with pleurisy, proceeding from a fistulous communication between the bronchia and pleura.* Within the short period which has since elapsed, two similar cases have been observed in the hospitals of this city. The interesting details of one of these have already been laid before you by my friend Dr. Wm. Stokes,† and I now have the honour of submitting to this learned Society the particulars of a third case of this hitherto rare disease.

Wm. M‘Nally, æt. 20, admitted into Dr. Orpen’s ward in the Whitworth Hospital on the 24th of October, 1827. His general appearance is that of a

* See page 137.

† See page 335.

robust man, labouring under acute inflammatory disease; his face flushed, skin hot, and pulse rapid (160); his breathing laborious and hurried (44). At each inspiration the *alæ nasi* dilate widely; the left side of his chest heaves greatly, whilst the right continues nearly immoveable; the margin of the liver is felt below the ribs, but the hand laid on the abdominal muscles can detect no motion either in them or in the diaphragm of the right side; his chest is very much distended at the right, especially anteriorly and laterally; the difference of circumference between the sides (measured from the xiphoid cartilage to the spinous process of the opposite vertebra) amounts to an inch and half. He lies exclusively on the dilated side; coughs a great deal, and in violent paroxysms; expectoration copious, and appears to consist wholly of mucus. Says that he feels no pain whatever, nor can he recollect any sensation of tearing, or of violent pain, suddenly affecting his side.

On employing percussion the dilated side yields a duller sound than the left; this however is evidently owing, in a considerable degree at least, to the infiltration of the subcutaneous cellular tissue of the right side, on which he constantly lies. Both anteriorly and posteriorly the natural respiratory murmur is extinct all over the right side of the chest; and from the eighth rib upward its place is supplied

by a loud *bourdonnement amphorique*,* accompanied, when he coughs or speaks, by a well-defined *tintement metallique*. No fluctuation is heard on succussion, or change of posture. At the left side the respiration is puerile, and the bronchial tubes are felt vibrating under the hand when applied over the supra-spinal fossa.

Such was the state of his symptoms when I first saw him on the morning of the 25th. The account which he gave of his previous history was, that he had enjoyed uninterrupted good health until June last, when his right clavicle was dislocated by a fall; his general health was not affected by the accident; and he asserts positively, that he never had cough, nor difficulty of breathing, until three weeks ago, when, after exposure to cold, he was seized with violent stitches in his right side, accompanied by painful, hard cough. For these symptoms he was ordered to take some pills, which produced salivation without (as will readily be believed) procuring any considerable alleviation of his sufferings. He next applied for admission into the Hardwicke Fever Hospital, where, under appropriate treatment in Dr. Orpen's ward, his symptoms were much relieved. This amendment was however of short duration, for after two days apparent convalescence he

* For the detection of these pathognomonic sounds I am indebted to the stethoscopic accuracy of my friend Dr. Wm. Beatty, who first examined the patient, and detected their existence.

was again seized with cough and violent oppression, and in this state was transmitted to the Whitworth Hospital.

DIAGNOSIS.

Pleuro-pneumo-thorax, with fistulous communication between the bronchia and right sac of the pleura, is unequivocally demonstrated by the Stethoscopic phenomena. The cause of this communication is not, however, so apparent; his appearance, and the history of his previous health, seem incompatible with the development of tubercles to such an extent as is usually observed in those cases where their bursting into the sac of the pleura gives rise to the extravasation of air, an event of infinitely rare occurrence, unless in the last stage of phthisis.

As the pleuritic stitch, with which his illness commenced, seemed to point out inflammation of the pleura as the original affection, I hazarded a conjecture that the intermission of pain, which he experienced in the Hardwicke Hospital, proceeded from the inflamed pleura passing into gangrene, and that the violent oppression and other symptoms, which after an interval of two days ensued, were produced by the detachment of the gangrenous eschar, and the consequent escape of air into the pleural sac; but as during the subsequent progress of the disease neither his breath nor sputa presented

any trace of the gangrenous fetor, the probability of this conjecture diminished considerably, and I felt quite at a loss how to account for the formation of the fistulous passage through the lung if the agency of tubercles were excluded.

From this period to the 31st instant, his symptoms were progressively aggravated; the compensatory respiration in his left lung became so extremely sonorous, as perfectly to simulate the *ronchus sonorus gravis** of acute bronchitis; he never slept; his cough grew more urgent, though the sputa always retained their bronchial character; his dyspnœa increased; his voice became inarticulate; his pulse, notwithstanding three venesections, was so rapid that it was impossible to count it; and his extreme debility, rapidly increasing, threatened a speedy and fatal termination to his sufferings. He still continued free from pain, but stated, that on moving in bed he felt water splashing within his chest; the dilatation of the affected side became more conspicuous; and at the left the heart was seen and felt beating, or rather fluttering, immediately under the axilla.

The principal alterations in the Stethoscopic phenomena were, that fluctuation had become evident on succussion; when he sat up in bed a drop was

* I employ indiscriminately the French and Latin terms, as the late M. Laennec was in the habit of using them at his Clinique.

heard to fall, with a peculiar metallic sound, on a fluid, the surface of which appeared to stand on the level of the seventh rib, below which point the sound, on percussion, was perfectly dull, and all murmur, either of respiration or voice, totally extinct ; whereas, from the seventh rib upwards, the *bourdonnement* and *tintement* were heard distinctly ; thus clearly defining the relative spaces occupied by the gaseous and liquid fluids.

I visited him early on the morning of the 31st, and found his state rendered still more hopeless by another sleepless night ; his pallid cheeks, livid lips, and haggard expression of countenance, threatened approaching asphyxia. Under these circumstances, the evacuation of the air and fluid contained in the pleura seemed the only means of procuring even a temporary alleviation of his sufferings ; in addition to which, his youth, and previous health, together with the acute nature of the disease, and the perfect integrity of the opposite lung, as ascertained by auscultation, formed a combination of circumstances which justified the expectation that the operation might possibly be crowned with ultimate success. This hope was doubtless much diminished by the existence of the fistulous communication, which, at each inspiration, allowed the air to pass readily into the pleura. However, as all the cases of this nature on record terminated fatally when unassisted by art, and as, moreover, some instances are related

by M. M. Bacque,* Jaymes, and Robin, where recovery followed the operation, although the liquid injected by the pleura returned by the mouth, (which can hardly be accounted for without supposing the existence of a fistulous passage through the lung,) I thought the operation not only justifiable, but that its omission in this case would be highly reprehensible. I therefore lost no time in proposing it to Dr. Orpen, who at once recognized its propriety, and consented to have it performed.

At four in the afternoon Messrs. M'Dowell, Carmichael, Read, and Adams, visited the patient with me, and in consultation it was determined to proceed with the operation *instantly*. The Stethoscopic sounds already enumerated were distinctly heard by these gentlemen, as well as by many other physicians and surgeons who were present at the operation. The patient being seated in bed, an incision was made by Mr. M'Dowell between the eighth and ninth ribs, (counting from above downwards,) at about three inches from the spine. When the muscles were divided, fluctuation was distinctly felt through the pleura; the division of this membrane was followed by a violent gush of yellow, puriform fluid, of a peculiarly heavy, disagreeable smell; at first this fluid came away in a continued stream, but its flow soon became interrupted, each

* Dictionnaire des Sciences Medicales. Art. Empyeme.

jet corresponding to an effort of expiration. When about three pints,* or rather more, of this fluid had flowed out, a loud rush of air followed, and continued for some minutes to issue from the wound, with considerable force, at each expiration.

At this period of the operation the patient uttered two or three agonizing groans, and appeared on the point of fainting; the wound was immediately closed, and he quickly recovered his composure and the use of his voice, expressed himself greatly relieved, and his countenance brightened up considerably. The wound was dressed with adhesive plaister, and a flannel roller applied round the thorax. In half an hour after the operation his pulse had improved considerably in strength and regularity, though its rapidity was scarcely diminished (150); his respiration, though much less laboured, retained its frequency (40). The alteration in the Stethoscopic phenomena was very striking; the *tintement* and *bourdonnement* had totally disappeared,† but

* A gentleman present at the operation remarked that this quantity of fluid could not be contained within the limits which in my diagnosis I had assigned to it, namely, between the diaphragm and the seventh rib, the patient being seated erect. In the ordinary state of the diaphragm I am willing to admit the justice of this remark; but if the protruded state of this muscle, thrusting the liver down before it, as in this instance, be taken into account, I apprehend that the space assigned will be found fully capable of containing three, or even four pints of fluid.

† This circumstance I conceive establishes the fact of the

the voice reverberated loudly, as in a vast phthisical cavern.

On the 1st of November, being the morning after the operation, the following report was made. Slept soundly all night, and feels greatly relieved; lies on his left side, which he says affords him the greatest comfort; coughed a good deal last evening, little afterwards; slight expectoration, apparently mucous; countenance improved; alæ nasi still dilate, but not so widely; respiration continues high, and hurried; both sides of thorax and of diaphragm now move, the right, however, considerably less than the left; the heart has resumed its natural place, and is now felt beating in situ. Pulse 140, considerably stronger than before the operation; the projection of the right side is much diminished; states, that he feels no pain except in the wound, from which there was a considerable discharge during the night.

A slight degree of *bourdonnement* is heard at each inspiration; but neither cough nor voice pro-

presence of both fluid and air being necessary to the production of these sounds, for we find them disappearing when the purulent fluid was all evacuated, and reappearing when a fresh supply of this fluid was secreted. I need scarcely remark that as the lung did not dilate so as to fill its side of the thorax, a portion of air must have always remained to occupy the intervening space, and that consequently its presence alone was not sufficient to produce the *bourdonnement* or *tintement*.

duces the *tintement*. At the left side the puerile respiration has lost much of its intensity.

At half-past two in the afternoon I visited him again with Mr. M'Dowell. His pulse had again become fluttering and irregular, and though he expressed himself quite free from suffering, his state was by no means so satisfactory as in the morning; the *tintement* and *bourdonnement* were again audible. A female catheter was introduced through the wound, and nearly a pint and a half of chocolate-coloured* fluid flowed out in interrupted jets, as if from a divided artery; when pressure was made on the abdomen the stream became continued, and coughing increased considerably the force of the jet. During this time the *bourdonnement* was particularly loud; the escape of air followed, as on the day preceding; its fœtor, however, less considerable.

The wound was again closed, and he expressed himself considerably easier; his respirations were 48, his pulse 140, and very weak. Towards eight o'clock in the evening he became very restless and uneasy, and his breathing exceedingly laborious. During the night he continued in an extremely agitated state, and expired early the next morning.

* This alteration of colour was produced by the admixture of a certain proportion of blood, effused by the pleura, or more correctly speaking, by the false membrane with which it was lined, and which had undergone a fresh attack of inflammation in consequence of the admission of the external air through the wound.

DISSECTION,

Was made twelve hours after death, in the presence of Drs. Cuming, Wm. Beatty, and M'Donnell; Messrs. Adams, Farange, Todd, and other professional gentlemen.

External appearances.—Body well formed; not much emaciated; right side of thorax scarcely, if at all, more dilated than the left; lips of wound slightly inflamed.

At the suggestion of one of the gentlemen present the abdomen was first opened. The liver projected considerably below the margin of the ribs, and the diaphragm at the right side was not within some inches as much contracted as at the left; the fluctuation of air was distinctly felt through it. An incision into the right side of the chest was followed by a rush of air not peculiarly fetid. When the sternum was removed the right lung was found greatly collapsed, occupying not more than one-third of its side of the thorax; it was attached to the third rib throughout its entire length by a firm fibro-cartilaginous band, and was also closely attached to the diaphragm; elsewhere free. The whole extent of the costal, pulmonic, and mediastinal pleura, was coated with a thick layer of lymph, which appeared organized, and highly vascular.

Some recent depositions of lymph, interspersed with minute bright red points, were also to be seen on its surface. Before detaching the lungs the pipe of a pair of bellows was introduced into the larynx; at each puff the superior lobe of the right lung was slightly inflated, but almost immediately subsided again, in consequence of the air escaping through three or four small circular apertures in the pleura, of about three lines in diameter; the air did not penetrate at all into the middle, or inferior lobes. When the lung was taken out there was found about the middle of the lower lobe, on its posterior surface, a large, round, fistulous orifice, with indurated margins, capable of admitting my finger, and penetrating three-fourths of an inch into the lung's substance; its internal surface was lined with a coating of lymph, precisely similar, in appearance, to the lining membrane, found in tubercular abscesses of recent formation. A probe cautiously introduced did not find its way into any of the bronchial tubes; but on laying it open a large tube was found leading directly into it. Some of the gentlemen who assisted at the dissection were of opinion that as the air did not make its escape through the fistulous orifice, this tube must have had its extremity plugged up; but as no air whatever appeared to penetrate into either of the lower lobes of the lung, and as the instrument employed for the purposes of insufflation allowed the air to pass, almost with equal freedom, through its sides, as through its tube, I did not

think this fact by any means satisfactorily established, especially as in all the tubercular cavities that I have had an opportunity of examining, the bronchial tubes leading thereto have uniformly remained unobstructed and pervious. The pulmonary tissue in the immediate vicinity of this excavation contained a few, perhaps eight or ten, grey, semi-transparent, granular tubercles, about the size of the smallest grains of shot. The lung elsewhere was dense, compact, and perfectly void of crepitus ; though examined with the minutest attention, not another tubercle could be discovered in its tissue. The glands about the bifurcation of the trachea contained several tubercles, some of which had advanced to suppuration. The left lung was perfectly healthy, if we except a small peripneumonic spot, of the size of an almond, in its upper lobe. The heart (in situ) presented nothing unusual in its appearance ; its right cavities filled with yellow fibrinous coagula. The vessels on the surface of the brain were distended with blood. No morbid appearance was observed in the abdominal viscera.

On reviewing this case, and comparing the symptoms observed during life with the morbid appearances found on dissection, several interesting considerations, both physiological and pathological, are suggested.

The acute nature of the disease, the absence of

all phthisical symptoms antecedent to the lung's rupture, and the rapid transition of the patient from rude health to the agonies of impending suffocation, distinguish this from the ordinary cases of pneumothorax resulting from a fistulous passage through the lung, in which the communication almost invariably occurs in the advanced stages of phthisis, when the patient's previous history and present symptoms but too unequivocally reveal the existence of cavities in the lungs. In such cases the only effect of the rupture seems to be, that it accelerates the fatal catastrophe, which must ere long have necessarily ensued from the vast extent of the pulmonary disorganization.

But in the present case not a symptom indicated the existence of phthisis, and accordingly we find a corresponding modification in the morbid appearances, for instead of vast phthisical abscesses, we meet in the lower lobe of an otherwise healthy lung a nidus of tubercles, in number not exceeding a dozen; of these one or more have suppurated, and burst into the pleura, the immediate consequence of which was the escape of air into the pleural sac, and the appalling train of symptoms consequent thereon. This effect of a few tubercles, though fortunately of rare occurrence, is not however unprecedented, for a similar case, the only one I am acquainted with in the annals of morbid anatomy, is thus recorded by Andral in the second volume of his *Clinique Medicale*,

page 433. “ Nous avons trouvé un pareil épanchement chez un individu dont les poumons ne contenaient tout au plus que cinq à six petits tubercules. Mais l'un d'eux, de la grosseur d'une noix, développé immédiatement au-dessous de la plèvre pulmonaire, et déjà ramolli, en avait déterminé la perforation.”

What a striking contrast do the tremendous effects resulting from so insignificant a number of tubercles in these instances present to the slow, chronic, and often insidious symptoms produced by hundreds, nay thousands, of these bodies in the ordinary forms of pulmonary consumption ! How far the inflammation of the pleura may in the present case have contributed to the development of the tubercles, or accelerated their progress, involves one of the most important and obscure points in the history of these morbid productions. That inflammation of the adjacent pulmonary tissue influences the progress of tubercles, is now, I believe, generally admitted even by those who deny its agency in producing them. May not inflammation of the pleura exert a similar influence when the tubercles are seated in its immediate vicinity ? This case at least suggests the idea.

Another circumstance of interest in the present case is the extraordinary displacement of the heart, which was felt pulsating in the left axilla, although

the effusion was confined exclusively to the right side. On the removal of the effused fluids the heart regained its natural appearance, and the patient was enabled to lie on the sound side, which before the operation he had found impossible. These facts must, I conceive, lead to a modification of the ingenious opinion proposed by M. Richerand, as to the reason why persons labouring under extensive thoracic effusion prefer lying on the affected side. This celebrated physiologist* made several experiments, by producing artificial hydro-thorax, to prove that fluid contained in one side of the chest could not by its gravitation displace the mediastinum, or exert any pressure on the organs contained in the opposite side, and hence inferred that persons with extravasated fluid in the thorax lie on the affected side, in order to avoid obstructing the free dilatation of the sound side, and denied that gravitation could have any influence in rendering the opposite position distressing. The facts, however, observed in the present case clearly establish, in opposition to the results of M. Richerand's experiments, that effusion in one side of the chest is capable of exerting a very considerable degree of pressure on the viscera contained in the other, and therefore may, by its gravitation, contribute very materially to the difficulty of breathing, which persons with fluid extravasated in the chest commonly experience from lying with the

* Nosogr. Chir. vol. 4.

sound side underneath. The influence of pressure in such cases is still farther confirmed by the fact, that immediately after the evacuation of the effused fluids the patient was enabled to lie on the sound side, although the necessity for the free dilatation of that side was as great as previously, in consequence of the other lung continuing in a state of inaction, as was clearly ascertained by auscultation.

It is unnecessary to recapitulate here the symptoms and physical signs which characterize this, in common with the ordinary cases of pleuro-pneumo-thorax with fistulous passage through the lung, as they have been so minutely and accurately described by M. Laennec, that from their presence the existence of this complicated form of pulmonary disease may be inferred, with a degree of certainty almost amounting to infallibility. Any apparent exception, or contradiction to these signs will, I apprehend, generally find a satisfactory explanation from a minute examination into the circumstances of the case; as in the present instance, the dull sound, yielded by the dilated side on percussion, and which at first appeared incompatible with the existence of pneumo-thorax, was, on close examination, found to depend on the œdematous condition of the integuments.

The result of the operation in this case, though productive of temporary alleviation, was

not such as to afford much prospect of its being generally successful in similar instances; and as all other means hitherto employed have been equally unsuccessful in arresting the progress of this affection, the practical utility of recognizing this form of disease is certainly not so great as if we possessed the means of remedying it when recognized. But even should future experience confirm the unfavourable result of such cases as the present, and prove that the operation of paracentesis can afford little or no permanent relief where the affection proceeds from the rupture of a tubercular abscess in the lung, it will still be of much practical utility to distinguish accurately between this and the other forms of pneumo-thorax and empyema, to recognize at an early period of their progress those cases which may be benefited by the operation, and by restricting it to them exclusively, rescue this valuable remedy from the disrepute into which it has at present fallen, in consequence of the difficulty so often experienced in determining as to the propriety of its employment.* Indeed the experience of every

* I have little doubt that when we shall attain the power of detecting with certainty the existence of empyema, the operation of paracentesis will come into much more general use, and that thereby many valuable lives will be saved. I shall briefly subjoin one, of several cases, which have led me to adopt this opinion.

A physician, a native of Berne in Switzerland, who witnessed the performance of the operation in the case which forms the subject of this paper, in a few days after showed me a large cicatrix on his left breast, which, he stated, was the mark of a similar

physician who cultivates the science of morbid anatomy, will supply him with abundant proofs that effusion, both fluid and aeriform, may take place, even to a considerable extent, into the cavity of the chest, without giving rise to any symptom, during the life of the individual, which could lead to the detection of its existence ; while on the other hand, the annals of surgery but too convincingly show that as the disease may exist without its characteristic symptoms, so these symptoms may exist without the disease.* How often has the operation

operation which had once been performed upon himself. Though his case was considered utterly hopeless by all his medical attendants, they nevertheless refused to perform the paracentesis thoracis, or even countenance the operation by their presence, so confident were they that the disease was not empyema. The consequence was, that his father, who was also a physician, and who, perhaps from having more anxiously and more attentively considered the case, adopted a different opinion, was obliged to perform the operation unassisted. Several quarts of purulent fluid were drawn off; his recovery followed rapidly ; and at present the lung of the affected side has resumed the full discharge of its functions, the natural respiratory murmur being audible all over its surface.

* Within the last week I have had an opportunity of examining a young man at the Whitworth Hospital, who presented every symptom enumerated by nosologists as demonstrative of effusion into the thorax. His right side was considerably dilated, especially inferiorly and laterally; its circumference measured two inches more than that of the left side, although the latter did not appear preternaturally contracted or diminished in its capacity. He lay constantly on the dilated side, and was threatened with suffocation if he attempted to turn on the other. He had constant harassing

of paracentesis been performed in order to evacuate a pleura which did not contain a single drop of effusion? A remarkable case of this kind is recorded by M. Baffos in his Inaugural Dissertation "*Sur l'Empyeme*," published at Paris in 1814. A patient in one of the principal hospitals of that city pre-

cough, with frothy mucous expectoration; his respiration, constantly hurried and laborious, became so extremely oppressed each night, that the nurse in attendance did not expect him to survive till morning. When he slept, which was only at intervals, his moans disturbed the other patients in the ward, and he frequently started up in affright, supposing himself pursued by bulls, or falling down through the house. He had hectic fever, night-sweats, diarrhoea, anorexia, insatiable thirst; his pulse never lower than 140; his face was anxious, pallid, and leuco-phlegmatic; lips of a leaden hue; emaciation excessive; extremities anasar-cous.

The history of his illness tended to confirm the belief that he laboured under empyema of the right side, for he positively asserted that he never had cough, nor difficulty of breathing, until two months before his admission into hospital, when, after exposure to cold, those symptoms made their appearance, accompanied by acute pain in his right side, which since then had gradually subsided.

If the symptoms and history of this case seemed to indicate the existence of effusion into the thorax, the dilatation of the right side, coupled with his constantly lying on that side, seemed no less unequivocally to point it out as the seat of the effusion. On applying the Stethoscope, chiefly for the purpose of confirming this diagnosis, my surprise was considerable on finding that the respiration was audible all over the dilated side, which circumstance was, I conceived, perfectly incompatible with the existence of so extensive an effusion as would be necessary to produce the dilata-

sented a combination of symptoms, which was supposed so unequivocally to demonstrate the existence of empyema, that the operation of paracentesis was performed, but to the surprise of the operator, no fluid was found; however, as the existence of empyema seemed indubitable, it was resolved to make

tion of the side, and the projection of the intercostal spaces; for the same degree of pressure which could cause the protrusion of those parts, supposing it to proceed from effusion, must exert a sufficient compressing force on the lung's surface to cause its collapse from the costal pleura, unless where it was retained in juxta-position with that membrane by adhesions, and thus render the respiration inaudible, except in the points corresponding to those adhesions. This view of the case was further confirmed by the respiration being almost totally extinct at the opposite side; whereas it almost invariably happens, that when effusion takes place into one side of the chest, the other takes on the compensatory puerile respiration. It was also observed, that the motion of the dilated was considerably greater than that of the opposite side, the exact reverse of which would have occurred if the right side had been the seat of the effusion. From these circumstances I concluded that no effusion had taken place into the right pleural sac; a conclusion which was fully established by the subsequent *post mortem* examination, the pleura of this side being found perfectly healthy. The right lung, which had acquired an unusual volume, accurately filled its side of the chest; several tubercles were dispersed through its tissue, and a vast abscess, filled with puriform matter, (recognized during life by a loud gargouillement) occupied nearly the entire upper lobe, and communicated freely with several large bronchial tubes, thus offering a satisfactory explanation of the patient's always lying on that side. The costal pleura of the left side was coated with a thick

an incision into the pleura of the opposite side. This second operation was attended with no better success than the first; not a drop of fluid followed the incision into either pleura. The result of the mistake committed in this case was fortunately less serious than has sometimes happened on similar occasions, for the patient survived the double operation.

But it is needless, as indeed it would be endless, to multiply examples of the obscurity which has hitherto enveloped the diagnosis and treatment of the various forms of thoracic effusion; enough has been said to prove the deficiency of our former means of investigation, and to point out the necessity which existed for some more accurate method of establishing a correct diagnosis in this obscure class of diseases.

I trust that those cases which I have had the

layer of lymph, in which several tubercles, as large as peas, were developed; the pulmonic pleura appeared also considerably thickened. The tissue of the lung, which was dense and solid, contained several miliary tubercles. The pericardium contained about seven ounces of a clear, colourless effusion.

I shall not protract this note by a detail of the other morbid appearances, as my only object in recording the case is to prove the importance of the physical signs furnished by auscultation, in enabling us to form a correct judgment of the existence or non-existence of effusion into the sac of the pleura.

honour of submitting to the consideration of this Society, will serve to prove that this want has, to some extent at least, been supplied by the discovery of the Stethoscope.

MERRION-SQUARE,

Nov. 5, 1827.

CASE
OF
INDURATED ENLARGEMENT OF THE UTERUS,
SUCCESSFULLY TREATED
WITH
IODINE.

BY R. ASHBURNER THETFORD, M.D., T.C.D.,

FELLOW OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS, &c. &c. &c.

Read Nov. 5, 1827.

ON the 25th of April last, about 4 o'clock, P. M., I was earnestly solicited by a young man to visit his mother, Jane Reilly, residing on Summer-Hill, whom he represented as dangerously ill, if not past recovery. She expressed herself with much apparent distress, from debility ; stating that, with the exception of one fever, she had never been confined to bed by any serious sickness until the present. She was of a costive habit, to counteract which she had been obliged to use purgative medicines constantly, and latterly in such doses, that she mentioned four ounces of Epsom salts in solution as a common,

though frequently ineffectual quantity. Since the 8th instant she had not had any evacuation from the intestines, although large doses of purgatives had been taken; and for the last three days her stomach had rejected every thing except a little porter. Urine passed with pain, and mostly by drops. She complained of headach, slight intolerance of light, and total want of sleep. Eyes dull, but not suffused; tongue coated with a yellowish white fur, and moist; inappetence; collapse of countenance; pulse 108, and very feeble; abdomen enlarged, and tender on pressure, particularly in the epigastric and hypogastric regions, in the latter of which pain was also felt. There was not much emaciation. She was in her fortieth year, and had borne one child when she was about sixteen years old. Additional symptoms indicated mechanical obstruction, and directed my attention to the vagina; but pain prevented further examination.

By the use of enemata the bowels began to act about two o'clock on the morning of the 27th, and a great quantity of very small scybala, with much offensive matter, came away, each evacuation causing considerable pain. The discharge from the bowels was preceded by convulsions, and frequent attacks of syncope. Oily aperients were afterwards taken daily, which produced several offensive and unnatural stools, attended with much pain, but general relief; and nightly anodynes were given to procure

sleep. Under this treatment her general appearance and strength improved ; but the tenderness and pain in the hypogastric region continued, also the pain in passing urine, which still came away in small quantities at a time. The pubic bones were very sensitive to the touch, and a tumor was felt above the symphysis.

After some hesitation she now acknowledged that there was a hard tumor in the vagina, easily felt by herself, and very painful to the touch, which had gradually increased in size, without any discharge from it ; and that menstruation had ceased for some months.

I prescribed various sedatives to assuage pain and procure sleep, and directed the aperients to be continued until the fæcal discharges had become natural.

This last object being obtained, I commenced an accurate local examination on the 9th of May. The attempt to introduce a finger into the vagina was met immediately within the labia by a projecting substance, which was easily ascertained to be the os uteri, somewhat enlarged, and firmer than natural ; beyond, and connected with which, a large tumor of osseous hardness opposed resistance. I succeeded in introducing a portion of the index finger between it and the cavity of the sacrum, but laterally and

anteriorly, any introduction between it and the other bones of the pelvis was impracticable. There could not exist a doubt of the tumor being the uterus of great size, and in a state of induration. I ordered alterative doses of the corrosive muriate of mercury, with pills of conium and hyoscyamus, and enjoined a strict attention to the state of the bowels.

This course was persevered in for thirty-six days. Her health amended, and she was able to walk in her room with less difficulty and pain ; but neither the size nor hardness of the uterus was reduced, nor was the pain of the pelvic bones much alleviated ; and her spirits were quite depressed from a conviction that her case was incurable.

From the moment that I ascertained the nature of her disease, I had resolved on prescribing Iodine, should the remedies then contemplated fail. Accordingly on the 14th of June I directed seven drops of the tincture to be taken three times daily, in a wine-glass full of cold water, which dose was augmented gradually to ten drops, every other medicine being discontinued, except castor oil when required.

The result was speedily favourable ; her spirits revived ; appetite greatly improved ; intestinal evacuations in general sufficient without any aperient ; urine passed in greater quantity at a time, and with diminished pain ; ability to take increased exercise ;

rapidly progressive absorption of the diseased substance of the uterus; periodical return of the catamenia.

On the 2d of August she was perfectly restored to health, and continues so.

It may be proper to state, that this individual was a patient of St. Thomas's Parish Dispensary, and unable to aid the effects of medicine by requisite diet.

November 5, 1827.

MEDICAL REPORT
OF THE
HOUSE OF RECOVERY, AND FEVER HOSPITAL,
CORK-STREET, DUBLIN,
FOR THE YEAR ENDING 4TH OF JANUARY, 1827.
By JOHN O'BRIEN, M.D.,
FELLOW OF THE COLLEGE OF PHYSICIANS, &c. &c.

For a long series of years continued fever has been the scourge and chief destroyer of the population of Ireland ; not only existing as a permanent or endemic malady in all populous communities, but occasionally exceeding its ordinary limits, and pouring the full tide of destruction on them in its epidemic form.

In the past year, the period embraced by the present Report, it has pleased the Supreme Dispenser of health and disease, under whose guidance the "pestilence walketh in darkness," to visit this city with one of those periodical calamities above alluded to, an epidemic fever, which in numerical extent, and the magnitude of its inflictions on the

community, has never been equalled by any previous epidemic, of which we possess any record, at least, any of equal duration.

The author is happy to announce, however, that this malady has lately considerably declined, and there is reason to hope, is now fast verging to a conclusion; but the traces of its fatal career are deeply imprinted on society, and its devastations but too visible in the desolation and misery it has left behind it. The laws which govern epidemic fever, and the pathology of the disease itself, are involved in considerable obscurity, and may be truly called the *terra incognita* of medicine, being subjects on which the wisest physicians and philosophers have exercised their ingenuity with indifferent success; and yet there is no disease in the Nosological Chart, upon which the safety and happiness of mankind more immediately depend; no disease so general, nay, universal; sparing neither age, sex, constitution, nor climate; none so destructive; none, in fine, whose improvement is so intimately connected with the improvement of medical science itself, as fever, which may be regarded as an epitome of all diseases.* The best, and probably the only mode of improving this great branch of practical medicine, appears to be that adopted, and strenuously recommended by

* Umbra morborum omnium, potius quam ipse morbus.

J. P. FRANK.

Sydenham ; namely, first, the construction of faithful and accurate historical records of the several epidemics as they arise ; and secondly, judicious generalizations of, and inductions from their phenomena ; in a word, by the application of the inductive and analogical method of reasoning, which has been so eminently successful in the other departments of natural philosophy.

In the spirit of this mode of inquiry, the author will endeavour to construct the following Report, so as to combine a historical record of the events which marked the progress of this epidemic with a medical or pathological record of the disease which constituted it.

The seasons of the year 1826 were such as all testimonies, historical and traditional, concur in describing as unfavourable to public health in Ireland : viz. a cold and dry spring, an intensely hot and dry summer, a variable autumn, and a severe and inclement winter. The summer, in particular, exceeded in heat and drought all former seasons which stand recorded in our imperfect natural history.

The thermometer in the latter part of June attained the unusual height of 83° at mid-day in the shade, and on the 18th of August it reached 86° , a height, of which the author can find no previous example in this country. In the meteorological

tables published by Mr. Wakefield in his "Statistical Account of Ireland," as in those of Mr. Kirwan, Dr. Crump, Dr. Patterson, and some others, which comprehend a pretty long series of years, the maximum height of the thermometer is 81° , which evidently expresses a temperature much lower than that just now stated. For four months antecedent to the 15th of July, on which the first rain fell, not a single shower descended to refresh the air or moisten the earth, but a fervid, stagnant, and oppressive atmosphere seemed again to realize those scenes which poets and physicians of old have depicted as the unerring harbingers of pestilence. The summer and autumn of the year 1825 had also been unusually hot and dry, and the potato crop, which it is unnecessary to add, forms a considerable part of the sustenance of our poor, suffered very material injury; the injury, however, was not extended to other vegetable articles of diet. At the conclusion of the spring, and commencement of summer, it unfortunately happened that a vast body of artisans, resident in the Liberties of Dublin, contiguous to this hospital, were thrown out of employment, and actually laboured under all the miseries of artificial, yet positive famine, being destitute of the means of purchasing food. It was publicly stated by the humane persons appointed to superintend the collection of subscriptions on this occasion, that no less than 20,000 persons were in a state of starvation in the Liberties; and the following prophetic sentence

appears embodied in their address to the public on the 3d of May, 1826 :—" The Committee confidently hope that the public sympathy will be extended to the present appeal, which, if not met by means of immediate and decisive prevention, must, by the addition of contagious disease to the ravages of famine, produce a frightful increase of calamity."

Such was the crisis, and such the combination of physical and moral evils under which this epidemic commenced. Some augmentation had taken place in the number of applicants and admissions to this hospital in the previous month, but it was not until the beginning of May that the epidemic tide began to overflow its ordinary limits, and that a fever exhibiting a new character arrested the attention of the physicians ; in a word, that our registry affords distinct proof of the presence of a new epidemic fever. On the 9th of May the number of applicants for admission exceeded the means of accommodation, and an overflow commenced, which subsequently became permanent, and increased uniformly until the epidemic reached its acme. The extent of our hospital accommodation at the commencement of the epidemic was 220 beds.

On the 17th of June the physicians of this hospital received the following communication, through the governors, from the General Board of Health, who anxiously alive to the progress of the growing

malady, addressed circular letters to the physicians of the different hospitals in Dublin, with a view to the adoption of such measures as seemed best calculated to arrest its progress :

(COPY)

“ General Board of Health, June 17, 1826.

“ GENTLEMEN,

“ I am directed by the General Board of Health to request you will communicate to the Board the result of your observation as to the prevalence of fever at present among the poor of this city, and state, whether fever spreads through families, and whether many individuals remain in their homes, and pass through the disease without receiving hospital relief.

“ I am further directed to request you will give your opinion, derived from observation and inspection of the poor in their houses, as to the causes which at present chiefly contribute to extend fever.

“ Your reply, forwarded to me with as little delay as possible, will be esteemed a favour.

“ I have the honour to be,

“ Gentlemen,

“ Your very obedient humble Servant,

“ FR. BARKER, Secretary.”

“ To the Physicians of the Fever Hospital,

“ Cork-street.”

To which the physicians returned the following answer :

(COPY)

" Fever Hospital, June 21, 1826.

" SIR,

" We have the honour to acknowledge the receipt of your letter of the 17th instant, and beg, in reply, to state, that fever extensively prevails at present among the poor of this city ; it spreads very much in families. A considerable number of persons unable to obtain hospital relief, pass through the disorder in their own homes : the causes of its diffusion we cannot with sufficient certainty assign. We may, however, state, that the contagion of fever seems to have acquired within a short period more than ordinary force, and that its influence is greatly extended by the wretched state of the poor, and the sick being suffered to remain too long among the healthy.

" We have the honour to be,

" Sir,

" Your very humble Servants,

" S. ROBINSON, M. D.

" J. O'BRIEN, M. D.

" J. O'REARDON, M. D.

" P. HARKAN, M. D.

" SAMUEL STRATTEN, M. D."

" To Francis Barker, Esq. M. D., Secretary

" to the General Board of Health."

At this period orders were issued by government, for the erection of a shed or temporary building in the garden of the Meath Hospital, which was opened on the 4th of August, for the reception of 240 patients. Medical inspectors also were appointed, whose duty it was to visit the houses of the poor, ascertain the seats of infection, the number of the sick, the character of the disease, and make daily reports on these subjects to the General Board of Health. On the 18th of August the Wellesley Hospital, North King-street, was opened for the reception of 113 patients. On the 15th of August the accommodation at Cork-street Hospital was augmented to 400 beds, by the erection of tents in the lawn of the hospital, where the novel spectacle of a sick camp, capable of containing 180 patients, was exhibited. The erection of tents, which were fitted up with great rapidity in the short space of two or three days, appeared to be a measure well calculated to meet the urgent demand for hospital accommodation which existed at this moment.

A further augmentation was made at Sir Patrick Dun's Hospital, and at Steven's Hospital ; and finally, all those measures proving inadequate, a large building in Kevin-street, formerly the coach factory of Messrs. Collier, was taken by government, and fitted up as an hospital, and was opened on the 4th of September for the reception of 230 patients. The

aggregate amount of hospital accommodation at this period exceeded 1400 beds, a number greater by 400 than that which existed in the epidemic of 1817-18. Notwithstanding this immense extent of hospital accommodation, altogether without parallel in our medical annals, such was the vast accumulation of disease at this period in the city, that at a moderate computation, not above half the sick could be accommodated in the hospitals.

From all those receptacles numbers were daily rejected for want of room, and a greater number still omitted to apply for admission, through despair of being able to obtain it ; a fact which the author had an opportunity of verifying personally in numerous instances. In the month of October a letter was addressed by the Secretary of the General Board of Health to the Lord Mayor of Dublin, announcing the formidable and alarming extent at which fever had arrived, and the necessity of extraordinary exertions to stem the increasing torrent, and of calling forth the resources of private charity in aid of the exertions of government. In consequence of this letter, which excited a considerable sensation through all classes, the necessity of a prompt and simultaneous effort to arrest the further progress of the epidemic, was felt and acknowledged by all.

The Lord Mayor, with due promptitude, con-

vened a Public Meeting at the Mansion-house, for the purpose of taking into consideration the means best calculated to promote the object above mentioned. At this meeting his Lordship communicated the reports transmitted from the General Board of Health, from the church-wardens of the several parishes, and from the hospitals of Dublin, by which it appeared, that the last named institutions, taken collectively, contained at that moment upwards of 1,400 patients labouring under fever, and that there still remained 3,200 sick in their own habitations, who could not be accommodated in the hospitals.

The author is aware that the recital of events so recent, and so generally known, may appear tedious to many, at least of his local readers, who are already fully acquainted with the occurrences alluded to; but they will recollect the nature of the duty imposed on the annalist of this institution, who addresses himself not to a part, but the whole of the community, and to posterity.

At the meeting just now alluded to, which was held at the Mansion-house on the 26th of October, 1826, it was resolved, that a general subscription should be immediately entered into, and a fund established for the relief of the sick and convalescent poor throughout the city, and of all persons labour-

ing under extreme indigence, who seemed likely to become the victims of infection.

It is hardly necessary to inform those who are acquainted with the benevolent character of the higher classes of Society in Dublin, that the appeal of charity could not prove unsuccessful at this awful crisis, when nearly the whole body of the labouring poor were suffering under the pressure of the two greatest calamities which human beings can endure, namely, sickness and want. A large and liberal subscription produced a considerable fund, applicable to the general purposes formerly stated. Parish meetings were also held, and private funds formed, suited to the necessities of each individual parish.

In pursuance of a plan drawn up and published by a distinguished member of the medical profession in Dublin, soup kitchens were established in the different parishes for the distribution of nutriment to the convalescent poor, whom the want of adequate sustenance rendered liable to relapses. Dispensaries were also established for furnishing medicines to the sick, who could not be received into hospitals. And here the author is happy to bear testimony to the alacrity with which the members of the medical profession, taken generally, undertook gratuitously the irksome, dangerous, and laborious service of attending the sick poor, who could not be received into

hospitals, at their own habitations. Those measures of relief were promptly carried into execution, and continued in operation for nearly the whole of the winter, and were productive of considerable relief and benefit to the poor in that inclement season ; but they made little impression on the epidemic, which continued its career with unabated violence.

Some apprehensions were entertained by the more sanguine advocates for the hospital system, that such measures were calculated to defeat their own object, and would contribute to the extension, rather than the suppression of fever ; for the poor, on finding themselves supplied with provisions, medicine, and medical advice, would, it was apprehended, prefer their own filthy and infected apartments to the airy wards of an hospital, and thus diffuse the contagion more widely. The truth is, however, that such feelings had, if any, but a very transitory and partial operation, and the pressure on the hospitals was very little diminished by the medical aid afforded to the people at their own homes ; for they soon discovered the inefficacy of such assistance as a substitute for hospital treatment.

The author had a full opportunity of verifying this inefficacy by personal experience, having been one of the medical attendants on the sick poor of St. Mark's parish, where he resides. In some instances, for example, two or three persons, perhaps,

were found lying in fever on the same filthy pallet, whilst the rest of the family were absent in the hospital, and none remained to attend the sick, who were thus left to the casual and uncertain assistance of their more humane neighbours. Such scenes sometimes occurred in small, filthy, unventilated apartments, as cellars, &c., where a dense atmosphere of contagion surrounded the infected bed, which no human being could respire for any length of time with impunity. Under such circumstances the best medicine was fresh air, a clean bed, and a nurse-tender, and those could not be had at the soup-kitchen or the dispensary. The only remedy the author ever thought of employing in such cases, was the expeditious removal of the sick to the hospital, which, from his connexion with this institution and Sir Patrick Dun's Hospital, he was able to effect perhaps more readily than his colleagues, and in this way he performed some essential service to the sick poor of St. Mark's parish.

After what has been just now stated, it will hardly be necessary for the author to express his conviction of the utility, nay, indispensable necessity of fever hospitals in a society constituted like ours, a utility evinced by their effects not only in lessening mortality, but in circumscribing the limits, and preventing the extension of the disease. Let the following scene, taken from life, serve as an illustration

of the mischief arising from a deficiency of hospital accommodation.

A poor tradesman in Little Ship-street was attacked by fever in August, 1826, and made two or three ineffectual applications, as he stated, to this and other hospitals for admission. The whole of his family, consisting of six persons, were attacked in succession, and all lay sick at the same time, and in the same bed. They had no attendant, and the inhabitants of the neighbouring apartments, terrified at seeing so many sick in the same room, were prevented by fear from administering the necessary assistance. This circumstance, the author is happy to say, is one of very rare occurrence among the Irish poor, who display the kindest feeling to each other in sickness, and the most heroic contempt of danger, but it so happened in this instance. In this deplorable state the author found this family, and it may be supposed lost no time in procuring their speedy removal to the hospital. Had they not been removed, the whole or major part of them must have perished; and it is not improbable, that if the first who sickened had been removed in due time, and the room properly cleansed and ventilated, the remainder might have escaped infection. This epidemic may be regarded as having reached its acme in the month of October, 1826, after which it continued nearly stationary through the winter. In the beginning of March in the present year a rapid and

unexpected diminution of fever had taken place, and the decrease has continued without interruption to the present time, May 12. In the latter end of April the reduction became so considerable, that our sick camp was evacuated, and at length finally removed on the 8th of May. On this day, May 12, the number in hospital is only 185, a number which scarcely exceeds the usual average. The author, before he closes this part of the Report, feels it incumbent on him, as a duty he owes to truth, lest too great a stress should be laid on public distress and starvation as the sole cause of fever, to state, that at the present moment, when this malady seems on the eve of becoming extinct, the complaints of distress and want of employment, are to the full as loud as at the commencement of the epidemic, and provisions are dearer.

The author shall now proceed to describe the fever which constituted this epidemic.

At the commencement of the epidemic, two species of fever were distinguishable in the wards of this hospital, which, to use the language of Sydenham, we shall call the fever of the old and the fever of the new constitution. The first was the ordinary typhus of this country, marked by its usual protracted periods, running on to the 11th, 14th, 17th, or 21st days. This species of fever was far inferior in numerical amount to the other, but far more fatal.

It became complicated in several instances with the fever of the new constitution, and assumed many of its symptoms; the delirium was more vivid than usual, often rising to phrenzy; black crusts on the tongue, and black sordes of the teeth and gums, which usually characterize bad cases of typhus, seldom presented themselves here. Petechiæ were less frequent, but the skin in many cases assumed a yellowish hue, not that intense or deep yellow which belongs to icteroid fever, a few cases only of which occurred, but the lighter shades characteristic of a bilious type. The temperature of the skin was but little increased, frequently even lower than the natural standard, and the general aspect of the disease partook more of a nervous than vascular character. The other species of fever, or that of the new constitution, which constituted the bulk of this epidemic, was one of short periods, terminating in three, five, seven, or nine days, but the second of those periods was the most frequent. In hospital practice it is difficult to ascertain the day of invasion with precision, the intellectual faculties, and particularly the memory, being impaired in most cases, and utterly obliterated in some. From the shortness of the present fever, however, the crisis was more easily ascertained than under ordinary circumstances. In the months of June and July, 1826, the author noted the day of crisis in forty cases with due caution, and of those nineteen terminated on the 5th day, twelve on the 7th, five on the 11th,

two on the 17th, and two on the 21st days. In this fever the chain of morbid actions was rapidly formed and rapidly terminated, and the disease developed itself with energy from the commencement. The access was sudden, and usually came on at mid-day. The person previously in perfect health would then be seized with sickness at stomach, headach, pain in the small of the back, and chilliness. On the approach of evening all these symptoms increased, and the febrile paroxysm was fully formed; the chilliness increased to a rigor, and the nausea to vomiting, which harassed the patient for the first three or four days of his fever in the form of an empty straining, and frequently continued through its whole course. On the evening of the 5th or 7th days the *exacerbatio critica* commenced, which, mostly with the intervention of a rigor, but very frequently without this symptom, terminated in a profuse perspiration, which continued through the night, so that on the following morning the crisis was complete, and we generally found the patient convalescent. We frequently received the glad tidings from himself in the following words:—"Sir, I got the *cool* last night." The *cool*, however, was sufficiently visible in his countenance before he opened his lips, but unfortunately in many instances it proved only a delusive truce to his sufferings. The patient was destined perhaps to be harassed by one, two, or three relapses, which prolonged the whole duration of his illness even beyond that of the most protracted

typhus. In fact, the liability to frequent relapses was one of the most striking characteristics by which this fever was distinguished from all previous epidemics, at least which happened in our time. We find, however, in Dr. Rutty's "History of the Weather and the Diseases of Dublin," two or three instances of epidemics of a similar character; and my esteemed friend, Dr. Barker, informs me, that the epidemic fever which prevailed in the year 1801 was of this type. Although our summer fevers are generally of short duration, the author has never previously witnessed a fever which equalled the present in liability to relapse. The five-day periods of this fever somewhat resembled the paroxysms of an intermittent, and the regularity and equability of the intermission or remission, for it sometimes amounted to no more, were calculated to impress this analogy more strongly on the mind.

In the case of a nurse-tender, named M'Evoy, the daughter of one of our hospital porters, who was attacked by this fever in June, 1826, and suffered two relapses, the interval between each attack was five days, and was synchronous with the febrile period; so that the whole duration of her fever, not including the intermissions, was fifteen days. The same thing occurred in one or two other cases. In some instances the longer periods of fourteen or twenty-one days seemed to be broken into shorter ones, which were submultiples of those numbers,

and it seemed as if nature was unsatisfied until the whole revolution was completed. It was, in fact, a long fever broken into short periods. If we could alter the type of our long fevers by art in this manner, how greatly should we lessen their mortality ! The liability to relapse in this fever was unquestionably in the inverse ratio of the duration of the disease ; the five-day fevers were more liable to relapse than the seven-day, and so on. In long fevers of seventeen and twenty-one days' relapse is a rare occurrence, unless under very unfavourable circumstances. The period of intermission the author thought was longer in the seven than in the five-day fevers, but was extremely irregular in all, varying from twenty-four hours to a fortnight, or even upwards. The tendency to relapse was not diminished by full or abstemious diet, or indeed by any regulations of regimen, or any of the ordinary precautions. As a proof of this, nearly all the hospital nurse-tenders attacked by this fever suffered one or more relapses, although they were treated with the utmost attention and kindness. In one of those cases the author gave the sulphate of quina perseveringly for a fortnight, and the patient escaped a relapse. Guided by the analogy above mentioned, he also directed this medicine in some other cases ; but such was the rapidity with which we were compelled to discharge patients, to make room for others, that this medicine could not be continued for a sufficient length of time, nor could its effects be ascertained when ad-

ministered ; and in the enormous influx and efflux of patients, which existed during this epidemic, its general employment would have been attended with too great an expense. The author cannot help still entertaining the opinion, qualified, however, he admits, by the absence of direct proof, that this medicine, if administered with judgment, and in due quantity, is capable of preventing relapse in fevers of this type.

In comparing the short period of this fever to the paroxysm of an intermittent, the author would be understood to mean a general resemblance only, for, in particular phenomena, these diseases were undoubtedly very dissimilar. Relapses, generally speaking, were milder and shorter than the original fever ; but to this many exceptions occurred. The general symptoms of the summer variety of this fever, in addition to those already mentioned, were,—acute headach, delirium, always active, sometimes phrenitic, rapid and hard pulse, white tongue, with florid edges, but sometimes natural, muscular and arthritic, rather than deep-seated pains, or, as they are termed, “pains of the bones,” not accompanied, however, by swelling of the joints, except in a few instances ; the skin in many cases of a light yellow tinge, and sometimes, though rarely, assuming the intense icteroid yellow, characteristic of jaundice and true yellow fever.

The author uses the word *rarely*, because he thinks this form of fever was not more prevalent in the present epidemic than in that of 1818, or indeed than in ordinary times, making the due allowance for the increase of number. Out of 1500 patients and upwards, who were placed under the author's care in this epidemic, four cases only of exquisite icteroid fever occurred, viz. two in June, one in October, 1826, and one in March, 1827. The pathological exposition of this appearance the author believes to be simply this, that irregular jaundice supervenes on fever in persons who have previously laboured under disorder of the biliary system; a view which, indeed, has been already suggested by Dr. Cheyne, in his able Report on the Epidemic Fever of 1818.

Between this form and the true yellow fever of certain hot climates there is at least this specific difference, that in the latter the yellow colour of the skin is pathognomic and general, though perhaps not a universal symptom, while in the endemic fevers of this country it is a rare and accidental occurrence, arising from an accidental cause. There exists probably the same analogy between this form of fever and the true yellow fever, as between the typhus, attended with glandular swellings, and the plague. Whatever theory we may adopt on this appearance, one fact is certain, that it always indicates a dangerous, and too often fatal form of disease, and in this respect undoubtedly assimilates with the true

yellow fever. The first case of intense icteroid fever which occurred to the author was that of Margaret Dunne, one of the ward-maids of the hospital, and daughter to a nurse-tender, in whose case he felt considerable interest and anxiety. This patient, a young woman of nineteen years of age, caught her fever, according to her own report, in the following manner:—Having, in the discharge of her duty as ward-maid, been engaged in washing the floor underneath a bed in which a patient affected with *yellow* fever had recently expired, she was struck by an offensive odour, of which she immediately complained to her companions. On the 5th of June, two or three days after the above occurrence, she sickened. On the third day of her illness she turned yellow; on the fourth, viz. that on which she was first placed under the author's care, the yellowness was intense and general, the eyes, and even nails being deeply tinged. Leading symptoms,—incessant vomiting of yellowish green fluid, intense head-ach, delirium, soreness and inflation of the epigastrium and abdomen. On the fifth day, a slight remission of symptoms; on sixth, an exacerbation of fever; on seventh, singultus and pointed features; eighth, death. Treatment,—twenty leeches to epigastrium and abdomen, repeated on the next day, (fifth of fever,) blue pill, calomel and opium, viz. fifteen grs. blue pill, three of calomel, per diem, in divided doses, with half a grain of opium in each pill; fomentations, blisters, purgative enemata.

The author mentions this case and the treatment to show the inefficiency of the Broussaian plan of leeching in this intense form of the disease ; and he now thinks that large doses of calomel, with bold venesection, offer a better chance of success. Although, generally speaking, in the shorter fevers, marked crises displayed themselves by critical exacerbation, rigor, and sweat ; yet in some of the more protracted cases of this class, as those which reached the ninth and eleventh days, no critical movement was observable, but the patient sank into a deep sleep, in which he continued, perhaps, for twenty-four hours, and awoke convalescent. The following case will serve as an illustration :

John Wright, æt. 30, admitted 20th June, 1826, on fifth day of his fever ; on 6th, 7th, and 8th days walked about the ward in a quiet delirium, talking incoherently to himself, but attempting no mischief. On 9th day his pulse was imperceptible, and a cold sweat covered his body ; he lay down in a state of complete exhaustion, fell into a deep sleep, in which he continued for twenty-four hours, and awoke convalescent.

In the still more protracted cases, insensible crises, always, however, accompanied with profound and tranquil sleep, were, on the whole, the more usual modes of termination. In two cases only a crisis was effected by epistaxis ; but several others occurred in

which this discharge, though always attended with some alleviation, did not prove critical. Three cases are noted in the author's journal, in two of which crisis took place on the third day, by a thick pustular eruption on the lips ; and in a third, by a similar eruption over the entire face.

In many instances the interval between fever and relapse was attended by a remission only, preceded by an imperfect crisis. In such cases, though the appetite was craving, and the patient declared himself well, yet the pulse retained its quickness, and the skin its heat ; the countenance was sickly, the eye languid, and the sleep disturbed ; symptoms which never failed to indicate approaching relapse. The intervals between relapses, however, were by no means in all cases attended only with remission ; but in very many a perfect apyrexia ensued, and convalescence seemed to be completely established. Notwithstanding the enormous increase of fever which took place in this summer (1826), the mortality was insignificant, compared with that of the preceding winter. It is not the least extraordinary characteristic of this epidemic, that the mortality was not only relatively, but positively or numerically less than when the aggregate monthly discharge of patients was not a third of its present amount. The miseries inflicted on the community, therefore, were considerably mitigated by the mildness of this fever, a character which it retained under the most un-

favourable circumstances. The author has met with several instances in which whole families residing under all the disadvantages of neglect and poverty, and destitute altogether of medical aid, had passed through this fever with impunity. He visited, for example, a cellar in St. Mark's parish, in which fourteen inmates resided, all of whom were attacked by fever, and all recovered. Although in the summer variety the majority of cases were mild, as now stated, yet this character by no means appertained to all, for intermixed with those some of the most intense and malignant forms of typhus presented themselves. Although the rheumatic character (general pains,) accompanied by urgent symptoms of gastric affection, as vomiting, pain of epigastrium, &c., predominated over every other in this fever, yet in several cases the head seemed primarily affected, and instances of maniacal or phrenitic delirium occurred, which, however, yielded readily to depletion, and seldom proved fatal.

In the autumn and winter, however, idiopathic and symptomatic dysentery, by the latter of which we mean the complications of dysentery with fever as a sequel or adjunct, considerably swelled our mortality, and embarrassed our treatment of fever. Indeed the gastro-enteric form of fever was the most intractable and fatal we had to contend with in those seasons. As the winter advanced, a considerable change took place in the type of this fever; the

crisis was now protracted to a longer period, and the five and seven day fevers were converted into periods of eleven and fourteen days, or ones still more protracted ; and the liability to, and frequency of relapse, were diminished in proportion as the length of the period was increased.

In the winter season the distinction between the two species of fever formerly mentioned, viz. the ordinary typhus, and the short fever of the new constitution, was less perceptible, and the two seemed to coalesce into one general class. Although the rheumatic type still predominated, it seemed in many instances to be supplanted by, or complicated with the pulmonic, gastric, or dysenteric types ; and in several cases those various forms became united.

Pectoral distress in some cases was symptomatic of gastric affections, as inflation and tenderness of the epigastrium, but in many others the pulmonic affection was primary. The dysenteric typhus, on the whole, was the most intractable and fatal form of the winter fever, few persons of advanced age having recovered from this complication of the disease. The worst forms of this latter were accompanied by intestinal hæmorrhage, degenerating sometimes into melæna.

The winter set in early, the first frosts having

taken place as early as the 8th of November, and was marked with unusual severity. The tents, which through the autumn were found perfectly unexceptionable, and even pleasant from their coolness, on the occurrence of cold and stormy weather became ill calculated for the object to which the urgent demand for hospital accommodation caused them to be applied. In cases of low typhus, where the circulation in the extremities is generally languid, and the animal heat below the natural standard, it is essential to the patient's recovery that the surrounding atmosphere should possess a moderate and comfortable temperature. This, however, could not be attained in the tents during the winter, and the resource which was frequently adopted by the nurse-tenders, from necessity, viz. that of closing up the tent, and covering the patient with a load of bed-clothes, was perhaps the worst mode of communicating warmth to the sick that could be devised. A thermometer, hung in one of the middle-sized tents, containing six beds, never varied more than $3\frac{1}{2}^{\circ}$ from the temperature of the external air while the tent-door lay open; whereas a thermometer placed in one of the large wards of the new building, indicated a temperature 10° higher than that of the external air. The consequences were injurious, in the author's opinion, to the recovery of the patients, and in a few cases, he laments to add, fatal.

Four cases of gangrened feet, the patients of

different physicians, occurred in the tents, in the months of December and January, three of which proved fatal from the gangrenous affection alone, and the fourth, who was a patient of the author, is still in a state of uncertainty, having been recently transmitted to Steeven's Hospital, to undergo an operation for the amputation of both legs. This poor man, whose name was William Hawkins, aged about twenty-five years, was found by the author in the beginning of February, 1827, labouring under typhus of the very worst form, marked by the following symptoms, viz. total insensibility; involuntary discharge of the excretions; a large gangrenous ulcer on the sacrum; the nates of a purple hue, and fast approaching to the same state; the feet cold, but at this time not discoloured. From this deplorable extremity, little hope was entertained of his recovery; but by a liberal allowance of wine and other cordials, he gradually recovered from his fever; but no artificial means of communicating heat were found capable of restoring the circulation in the feet, although the patient was removed, as soon as this measure could be resorted to without endangering his life, to a comfortable ward in the building.

Here the author cannot omit the opportunity of expressing his sense of the zeal and unremitting attention of our respectable surgeon, Mr. Trant, in the arduous and dangerous service which devolved on him of attending the numerous cases of gangrene

which occurred in the present epidemic ; and to him poor Hawkins, if he ultimately recover, will be indebted in a great degree for his life. After a long and doubtful struggle through the months of February, March, and April, the gangrened feet separated, and sloughed off, and the patient was considered to have regained such a favourable state of health and strength as to enable him to bear the operation of amputation.*

The inconveniences above described as appertaining to the tents, if they be not altogether theoretical, were amply compensated by the vast advantage resulting from them to the public, by affording additional hospital accommodation in the vicinity of the most distressed and populous district in Dublin ; and the author has no doubt that by their means hundreds of lives have been saved.

The subjoined Table, for which the author is indebted to the register, Mr. J. Montgomery, exhibits a very favourable view of the effects of the tents, as it may be observed that the mortality in the two great divisions of the hospital was nearly equal ; a fact which must incline the balance in favour of the tents, as the great majority of patients therein were males, whilst those in the building were chiefly females, among whom the mortality from fever is always less than in the other sex.

* This patient, I am glad to state, has recovered.

Statement of the Admissions, Discharges, and Deaths, from 14th August, 1826, to 4th April, 1827, at the House of Recovery, Cork-street.

	<i>House.</i>			<i>Tents.</i>		
	Admitted.	Discharged.	Died.	Admitted.	Discharged.	Died.
From 4th August to 4th Sept..	660	610	16	432	262	7
5th Sept. to 4th Oct.	925	922	28	570	539	11
5th Oct. to 4th Nov.	753	730	18	458	443	15
5th Nov. to 4th Dec.	702	692	22	403	392	19
5th Dec. to 4th Jan. 1827,	663	627	28	461	424	13
5th Jan. to 4th Feb.	655	662	37	414	420	18
5th Feb. to 4th March..	511	487	29	303	297	24
5th March to 4th April..	538	534	26	246	269	21
	5407	5264	204	3286	3046	128

The impression on the author's mind is, that fevers of the synochous class terminated more rapidly in the low temperature of the tents than in the building. It has been already observed, that this fever underwent an alteration of type in the winter, and assumed a more typhoid character. At this period the tendency to gangrene was remarkable and almost characteristic, and accordingly numerous cases of this description occurred in all parts of the hospital: but gangrene of the feet, as before observed, was confined exclusively to the tents. The rapidity with which gangrenous sores of the hips, sacrum, scapula, and even tip of the nose appeared was such,

that very frequently the physician found a gangrene rapidly forming on a part, which on the preceding day had no appearance of disease. In a case which very recently occurred in the author's ward, the whole surface of the body changed, in the short interval of twenty-four hours, to a deep purple hue, being an example of that intense form of typhus which the physicians of the last century would call putrid-malignant fever.

Gangrenous ulcers of the hips and loins frequently occur in fever hospitals, and considerably augment the mortality in those institutions. The rigidity of the hospital beds undoubtedly accelerates them, but is by no means their sole cause, for they may happen, unless due caution be employed, on a bed of down. They are usually preceded by an erysipelatous blush, produced by the pressure of the body on circumscribed points of support, which runs rapidly into gangrene. Much may be done to prevent this distressing accident, by daily examinations on the part of the physician, and that attention on the part of the nurse-tender, which such examinations never fail to inspire. The position of the patient in bed, in cases of bad typhus, should be frequently changed, to prevent continued pressure on a single point, and the effects of hardness obviated, by as many doubled blankets interlaid between sheet and bed as can be spared. The chief points of support should at the same time be covered with stick-

ing plaister, to obviate the effects of friction, even before any redness has taken place. In incipient sores of this kind, poultices or leeches, unless when the part can be completely protected from pressure, which is generally impossible, must only accelerate the advance of the gangrene.

The best local applications, even in the erythematic stage, appear to be spirituous stimulants of the stronger kind ; for the disease clearly arises from debility or loss of vitality in the superficial capillary arteries, which can only be combated by stimulants : we generally employ the camphorated spirit of wine, or spirit of turpentine. The temperature of the skin seemed to be connected with the strong tendency to gangrene in this fever, and to afford some explanation of that tendency. In the winter variety of this fever, the temperature on several trials made with the thermometer appeared lower than the ordinary standard, as may be seen in the following Table of the heat and pulses, observed in twenty cases in the month of March, 1827 :—

Table of the Pulses, Respirations, and Temperature of the Skin, observed in twenty cases, in the month of March, 1827.

Age.	Names.	Pulse.	Resp.	Temp.	Day of Fever.
30	Mary Magrath ..	80	25	92	10
16	Margaret Scott ..	108	30	101	9
40	Margaret Sullivan	112	32	100	11
14	Mary Hand ..	112	31	98	12
16	Bess Kennedy ..	124	32	102	13
60	Bridget Gardener..	80	25	94	5
40	Margaret M'Donald	125	30	100	7
30	Mary Kenny ..	100	31	98	6
25	Charlotte Harrison	90	33	98	4
18	Sarah Jennings ..	100	28	102	3
40	Elizabeth Pearson	84	28	98	7
50	Elizabeth Smith ..	80	29	96	5
30	Mary Cooney ..	130	32	106	3
70	Mary Nangle ..	76	28	95	7
30	Bridget M'Daniel..	100	30	102	5
20	Margaret Farrell ..	95	28	100	7
30	Mary Larkin ..	110	31	104	5
25	Mary Cahill ..	104	30	101	9
50	Mary Burgess ..	120	22	104	10
30	Ellen Shale ..	98	30	100	5

These experiments were made with considerable caution, and by a comparison of them with those made by Dr. Cheyne, in the epidemic of 1818, it will be seen that a considerable inferiority of temperature existed in the present fever. They were instituted to ascertain whether any regular law of proportion existed between the temperature of the skin and the pulse ; but it may be seen, that although a general accordance is discoverable, it was by no means uniform or regular. Whenever the heat was highest or lowest, the pulse was also found in the

corresponding extremes; but in the intermediate degrees of both no regularity could be traced. The temperature in the experiments above mentioned is that of the axilla, but several trials were made to ascertain the difference of temperature between the mouth and axilla, and it was found that, when the latter was closely covered and defended from the external air, no material difference existed; but when this precaution was not observed the difference amounted to one or two degrees.

In the spring of the present year (1827) the type of fever suffered a considerable alteration from that which it displayed at the same period in 1826. Intermittent fever, which had not made its appearance for several years in Dublin, began to prevail pretty generally, whilst the ordinary continued fevers shewed a strong tendency to assume the intermittent and remittent forms; and these three orders of fevers were converted into each other in a new and extraordinary manner.

A patient, named James M'Cormick, was discharged cured from one of the tents under the author's care, in the month of March, 1827, and after a few days' absence again returned, labouring under intermittent fever. He was treated with the sulphate of quina, and again discharged cured; in a day or two he relapsed a second time, and returned once more. The author found him, immediately

after admission, sitting on his bed-side in a rigor so strong, that the crepitus or chattering of his teeth could be heard outside the tent. No doubt was entertained that it was the paroxysm of an intermittent; but lo! it turned out to be the rigor of continued fever. He subsequently passed through a protracted and severe typhus, in which his life was in considerable danger.

The intermittent type principally prevailed, as far as the author observed, in the relapses which occurred after continued fever, and was marked in some instances by extreme irregularity. A patient would shake once, twice, or thrice at irregular intervals, and then the fever would go off, or become continued. The type of the regular intermittent was, in all cases which the author met with, quotidian or tertian, but principally the former. In many cases, as observed of the summer fever of 1826, not only the interval between relapses in continued fever, but that between paroxysms in intermittent fever, was attended by a remission of the febrile symptoms only, and indeed a complete apyrexia seldom occurred on those occasions.

The following Table of admissions, discharges, and deaths, from the commencement of the epidemic up to the present time, will exhibit, at one view, its rate of increase and decrease, and the mortality in the different periods of its progress.

HOUSE OF RECOVERY, CORK-STREET.

*Table of Admissions, Discharges, and Deaths for the year 1826,
and five months of the year 1827.*

1826.			Admitted.	Discharged.	Died.
January	..	..	526	520	39
February	..	..	383	299	28
March	..	..	484	459	34
April	..	..	612	558	30
May	..	..	802	784	26
June	..	..	741	723	21
July	..	..	808	768	16
August	..	..	1324	1121	32
September	..	..	1495	1461	39
October	..	..	1211	1173	33
November	..	..	1102	1085	41
December	..	..	1124	1058	41
			10,612	10,002	380

Mortality, 1 in $27\frac{51}{93}$.

1827.			Admitted.	Discharged.	Died.
January	..	..	1069	1082	55
February	..	..	814	784	53
March	..	..	784	803	47
April	..	..	499	568	21
May	..	..	492	463	26
			3658	3700	202

Mortality, 1 in $19\frac{42}{101}$.

Total Mortality, 1 in $23\frac{316}{582}$.

The treatment of fever has fluctuated at different periods with the principles which form its basis,—principles mutable, uncertain, and arbitrary, and upon which the caprice of medical theory has been peculiarly exercised. It applies itself to the removal of the proximate cause of fever, which for time immemorial has been the subject not merely of divided opinion, but of warm controversy in the several schools of medicine.

The humoral pathologist of the last century sought to restore the deranged crasis of the blood and other fluids, which he believed to be the immediate cause of fever, by diluents, demulcents, incrassants, and correctors, of acid and alkaline acrimony. The disciples of the nervous theory of Hoffman and Cullen again by anodynes, tonics, and stimulants. The Brunonians by the most powerful agents of this latter class, viz. vinous and spirituous potations; whilst the modern inflammationist adopts a less devious route, and resolves the whole mystery of treatment into blood-letting alone. For the author's part, he belongs to no particular sect in pyretology, but is a strict eclectic, adopting whatever he finds rational and useful in the theories of all. His object is only to attain truth. On the subject of idiopathic fevers, his creed is, that they are governed by laws peculiar to themselves, and distinct from the phlegmasiæ or symptomatic fevers; that they observe certain periodic movements, and have a tendency to

terminate on particular days, usually called critical; and that when once the circle of morbid actions is established, the interference of art may modify or abridge the periodic movement, but is incapable of destroying it altogether. He thinks, in fine, that though the physician may guide his patient to a happy termination by a judicious system of management, he shall vainly endeavour to bound over the course, and reach the goal by cutting short the disease at once. The groups in our fever hospitals are composed of three distinct classes of fevers. The first and most numerous are the synochous fevers, which affect short periods, and are developed rapidly, with strong arterial action, and increased temperature. In those fevers blood-letting is generally useful, sometimes indispensable, and sometimes altogether unnecessary, nature alone performing the work to the physician's hand, and better without his interference. The second class, also very numerous, are the symptomatic fevers, or phlegmasiæ, in which blood-letting is indispensable. The third is the typhus, called in olden time by our more accomplished neighbours, the "Irish Ague," in which, though blood-letting may sometimes be useful and necessary, yet the lancet, like the soldier's sword, ought to be kept in its sheath, and not drawn forth except on great emergencies. In the summer and autumnal variety of the present epidemic, in which, as was formerly stated, gastric symptoms predominated, the author in the first instance, usually or-

dered an emetic, after the operation of which, if vomiting, nausea, or epigastric tenderness still remained, he directed a moderate venesection of ten or twelve ounces, and five grains of calomel, with half a grain or a grain of opium, to be repeated at intervals of five or six hours, until an alleviation of pain and vomiting was procured. Occasionally the opium was omitted, and the calomel alone, without any adjunct, was exhibited in the form of powder, according to the practice in India in cases of cholera, a method which succeeded in many cases of obstinate vomiting, in which no substance in a pilular form could be retained a moment on the stomach. Super-added to those measures, leeches were applied to the epigastrium if great sensibility, pain, or inflation of that region seemed to demand such a remedy. On some occasions, but rarely, a second venesection was necessary before the symptoms gave way; but in general an emetic and one venesection were sufficient, after which the disease went on through its period of five or seven days with safety, by the aid of the simplest purgatives, as the neutral salts, or castor oil. With respect to the use of calomel, as above described, the author feels it necessary to make a reservation, which he hopes will operate as a caution to the junior members of the profession, namely, that if pushed beyond a certain limit, it is liable to produce one most untoward and distressing consequence, viz. mercurial sore mouth, in comparison with which, a short fever is a mild disease. In the

more intense forms of gastric fever, however, where the patient's life is in danger, this consideration should not be much attended to. On the approach of relapse, so characteristic of this fever, the ordinary resource was an emetic, which in many instances re-established convalescence, without the aid of other medicines.

The summer variety of this fever, which exhibited a far more inflammatory character than the ordinary typhus of this country, scarcely admitted of the cordial or stimulant treatment by wine, &c., which never failed to "drive the disease to the head," * aggravate the symptoms, and even protract the crisis to a more distant period. By an injudicious use of stimulants previously to admission, administered with the view of exciting perspiration, a disease, in its own nature mild, was frequently converted into one highly dangerous and intractable.

In the winter season, as before observed, the distinctive characters of this fever were lost, and confounded in those of ordinary typhus; or, in other words, it assumed the typhoid character. In those cases the object the author proposed to himself was, to steer the patient to a crisis, guarding against the occurrence of local congestion or inflammation, and according as such congestion or inflammation at-

* Sydenham.

tacked the cephalic, pulmonic, or gastric organs, he was governed by their magnitude and degree, as to the mode and measure of depletion requisite; and by the pulse, age, duration of fever, and powers of reaction, whether such depletion should be at all resorted to. In cases of typhus, attended with active delirium, headach, and suffused eyes, the author has never hesitated to detract blood from the head pretty freely. This general rule of practice, however, he feels it necessary to qualify by the following comment. viz. that he has seen several cases of violent delirium, in which this symptom "went off of itself," without the loss of a drop of blood, and others, in which large detractions of this fluid failed to save the patient's life. He recommends in all cases of this description, depilation of the scalp, and the application of cold, and will venture to guarantee the patient against catarrh, auritis, or odontalgia, if the precaution of a flannel cap be added, which is the general practice of this hospital. If good leeches can be had, they are perhaps, on the whole, preferable to arteriotomy, on account of the strong disposition which wounds exhibit, in persons labouring under typhus, to run into erysipelas and gangrene. If cases should occur in which the indications for blood-letting equilibrate so as to leave any doubt on the physician's mind as to the propriety of its adoption, the qualification above mentioned, in respect to the detraction of blood from the head, will

suggest to the youthful practitioner which is the safest course.

In the adynamic typhus, attended with coma, stupor, muttering delirium, tremors, subsultus, suspiria, the author believes blood-letting to be wholly inadmissible, and trusts in such cases to blisters applied in succession round the shaven scalp and to the spine. In the pulmonic and gastric forms of typhus the indications for blood-letting are, on the whole, less equivocal than in the cephalic, and the necessity for this measure more urgent.

In the dysenteric typhus, or typhus complicated with dysentery in various degrees of severity, which has been noticed as constituting a frequent and fatal form of fever during the present epidemic, the remedy usually employed was calomel and opium, or the latter remedy alone, or in conjunction with astringents, when excessive debility rendered the constitution incapable of sustaining the mercurial irritation. In those cases gentle purgatives were interposed, and the patient's strength was supported by cordials.

When dysentery occurred as a sequel rather than a symptom of fever, it was treated precisely as above, and the author was seldom disappointed in the effect. In maniacal delirium, and in primary or secondary pneumonia, the tartar-emetic solution was frequently

employed with benefit. In cases where the skin was hot, rough, and dry, antimonial powder and calomel in small doses have been found to exercise a beneficial agency at once upon the external and internal surfaces, and to improve the character of the disease. The febrifuge virtues of camphor have long been celebrated, and render it undoubtedly the most valuable internal medicine we possess in typhoid fevers. The stomach does not easily bear this medicine in larger doses than two or three grains, and the trials which the author has made of larger doses, such as ten grains, induce him to believe that the benefit is not in proportion to the magnitude of the dose, as some German authors would make us believe. In deference to the old school, he occasionally uses the infusion of serpentaria as the fluid vehicle for the camphor mixture, with some improvement, as he thinks, of its virtues. The imperfect solution of camphor in distilled vinegar has been strongly recommended by Dr. Mead in low fevers, and the author's experience enables him to confirm the character given of it by that celebrated physician. It proves antiseptic, cardiac, and stimulant, invariably warming the stomach and exhilarating the spirits, and has the further advantage, that it may be given in much smaller doses, and is considerably less nauseous than the common camphor mixture.

Wine is certainly the best cordial we possess in

typhus, and notwithstanding the clamour raised against this article by the inflammationists, the author declares that his experience fully confirms the testimony of old Gerard Boate,* who, in speaking of the Irish ague (typhus) states, that “when it is treated with good cordials few persons die of it.” Some discrimination and caution, however, are necessary in the employment of this article. In the early stage of fever, or, as it is called, the stage of excitement, wine is seldom useful or necessary, and is chiefly applicable to the middle and latter stages, viz. those of debility or collapse. But the difficulty is, as has been justly remarked by Dr. Harkan, in the Report for 1825, to ascertain the limits between those stages, and determine the precise moment when it is proper to commence the cordial treatment. When much depletion has been practised in the first stage of the disease, the author thinks the physician will find it his interest not to be very nice about the moment he commences his cordials; and so far from increasing the tendency to congestions in the capillary system, which constitute the chief evils to be guarded against in fever, wine, by gently stimulating the whole arterial system, is calculated to counteract such a tendency, and restore the balance of the circulation. If this view be correct, wine and blood-letting will co-operate to the same end, and the author firmly believes they do, when both

* See Natural History of Ireland.

are used with moderation and judgment. The quantity, however, is a point of considerable importance and nicety, for if the proper limit be exceeded it will augment rather than diminish the restlessness and delirium inseparable from bad fevers. In the middle stage of fever the author seldom exceeds four ounces of wine in twenty-four hours, but more frequently allows only two ounces. In the advanced stage eight and twelve ounces are the usual quantities. In particular cases, however, much larger quantities may and ought to be administered ; at the same time the effects ought to be carefully attended to, and the quantity proportioned accordingly. If it promotes sleep, and diminishes nervous irritation, it is a good indication for its use ; but if it quickens the respiration, and increases heat, restlessness and delirium, the quantity should be diminished, or it should be withdrawn altogether, and deferred to a later period of the disease. It may be remarked, in conclusion, that wine proves more remedial and salutary to the lower classes of society, who seldom taste a wholesome article of diet, than to the higher, who are more accustomed to this beverage ; in hospital practice, therefore, less caution is necessary than in private. For his opinion on the use of purgatives and other remedies of minor importance in the treatment of fever, the author begs leave to refer to his former Reports.

It now remains only to make a few observations on the causes of epidemic fever.

The causes of fever may be divided into two classes,—predisposing and exciting; but the truth is, that no accurate limits can be established between them, for many of the former, when applied in combination, or with sufficient energy, become exciting causes, and the latter probably never operate without previously creating a predisposition. To present to the reader's view, at a single glance, the causes which predispose to fever, the author could wish to introduce him into one of those miserable apartments which form the residences of the poor of this city, whether cellar or garret, in which he would soon recognize in its most hideous form of intensity, the following appalling detail, viz. starvation, filth, nakedness, rags, an apartment crowded, unventilated, or in the other extreme, roofless and windowless, and pervious to the storm; dejection of mind, fatigue, debility, and in some cases, the author is sorry to add, riot and intoxication, which considerably aggravate the other miseries.*

Notwithstanding the extensive prevalence of all the causes above mentioned in the dense and crowded

* Dr. Grattan, in an able pamphlet lately published on the Causes of Fever, has proposed a plan for improving the condition of the poor of Ireland, which the author hopes will meet with that attention from the public which its merit and the importance of the subject deserve.—See *Observations on the Causes and Prevention of Fever and Pauperism in Ireland.*—By RICHARD GRAT-TAN, M. D.

population of this city, the author's belief on the subject of epidemic fevers is, that these causes alone are insufficient for the creation of such calamities, without the aid of those we call exciting causes, the most powerful of which are extremes of heat and cold, human contagion, and malaria or morbid exhalations from the earth diffused through the atmosphere. That this epidemic has been propagated in a very considerable degree by contagion the author has been convinced by frequent personal inspection of the habitations of the poor, in which few insulated cases of fever occurred, but on the contrary, the disease was propagated to a number of individuals in succession.

In further proof of this proposition the author submits the following facts, to which he requests the attention of Dr. M'Lean and his followers. Of fifty-seven nurse-tenders employed at Cork-street Hospital for the last twelve months, up to May, 1827, fifty-two were attacked by fever, and of this number fifteen had second attacks, in which we do not include relapses, for every individual, as far as the author can ascertain, relapsed; but fevers with long intervals interposed. Of the individuals above mentioned two died. Besides the persons now stated, the register and matron suffered attacks of fever within the period specified; the apothecary suffered a severe attack of febrile dysentery, and the author regrets to add, but does not adduce this latter

instance as the effect of contagion, that the apothecary's assistant, a most zealous, attentive, and promising young man, died of enteritis, contracted in the discharge of his duty, during the severe snow in the month of December, 1826. Here, in a period of twelve months, we find that of about sixty-four persons, *permanent* residents, fifty-five are attacked by fever.

The author thinks he may challenge any other institution in the empire, even with a much larger number of inhabitants, save a fever hospital, to produce in so short a period so large a number of sufferers from this disease. None of the physicians of this hospital suffered an attack of fever in the present epidemic, being indebted, no doubt, for their immunity to the power of habit; but several physicians attached to other fever hospitals and dispensaries suffered attacks of fever, and it is with the most sincere sorrow the author includes in this number the late Dr. Stack, physician to Sir Patrick Dun's Hospital, a gentleman distinguished for every quality which could confer dignity on the physician and the man, who fell a victim to a second attack of fever during the present epidemic.

In the month of October, 1826, the author commenced an inquiry among the patients of this hospital, taken without selection after their admission, with a view to ascertain the proportion of unequivocal

cases of infection* to those of a doubtful character, or in which the presence of contagion could not be traced. After an inquiry of some days, however, he gave up the investigation as unnecessary, the number of insulated cases of fever not having amounted to ten per cent., and it was ascertained in several instances, that whole families, without a single exception, had passed through this and other hospitals. In a house in Longford-lane, Longford-street, the author ascertained, by personal inspection, that every individual, amounting to twelve in number, had been attacked by fever. In a house in Little Ship-street four families, who occupied the upper part of the house as lodgers, amounting to fifteen or sixteen persons, were all attacked by this fever, and two of the number died. The general conviction among the inhabitants of the above house was, that the fever was imported thither by one of the two persons who died, and who became an inmate of the house at an early period of the epidemic. In a house in Bride-street, in which a family of seven persons all suffered attacks of fever in succession, the disease was clearly traced to a lodger, who had removed from an infected apartment, and was presently after attacked by fever. The parties above mentioned

* Contagion the infecting principle, infection the act or mode of communicating it. Such is the sense in which we use these terms in the present Report, which we believe to be that of the best authorities.—*See Authorities cited by Dr. Handcock on Pestilence.*

were by no means suffering from want, being tradesmen, and not out of employment.

Is there then no other generating principle? Are there no exciting causes of fever but contagion alone? The author believes in the affirmative of this question, namely, that other causes exist, for he avows himself a contingent contagionist; and among them he would place, in the foremost rank, extremes of heat and cold, and the rapid alternation of those extremes, by which, we are informed by Sydenham, our ablest authority in pyretology, that more human beings have been destroyed, than by the sword, pestilence, and famine together.

The following short case will illustrate the mode in which cold and moisture may co-operate in generating fever. A gentleman, who resided within two miles of Dublin, set out on foot on a cold day in the month of December, in perfect health, on his journey homeward. Ere he had completed half his journey he was overtaken by a violent storm of wind and rain, by which, in a short time, he was completely wet to the skin. On his arrival at home he immediately changed his clothes, and felt no inconvenience for a considerable portion of the day. After dinner, however, a chilliness came on which gradually increased to a perfect rigor; he went to bed very ill; the rigor was succeeded by a violent hot stage in which the author found him, with a pulse

up to 120 in a minute, skin hot, severe throbbing of the temples, but no very intense headach. The author recommended, it being now late in the evening, that the patient's feet should be fomented with hot water, that he should be liberally supplied with warm whey, and that more active measures should be deferred till the morrow. He spent a restless and uneasy night, but towards morning a profuse and general perspiration broke forth over his body, which continued without interruption for six hours, and, to use the language of the old school, perfectly resolved the disease. The patient was convalescent on the following day, and in two or three days more able to resume his usual occupations. This was the most striking example of an ephemera the author has met with for a considerable time, and had he treated this patient by the abstraction of twenty-four ounces of blood, as he has no doubt some ardent phlebotomists would have done, he greatly doubts if the type of this mild fever would not have been altered for the worse, and its period protracted.

In addition to the exciting causes of fever already enumerated, there remains one, which may be regarded, perhaps, as more extensive in its operation than all the rest combined, namely, the exhalations arising from the surface of the earth, but assuming a more palpable and cognizable form as they issue from stagnant waters and marshes. It has been objected by a learned writer beyond the Atlantic,

(Dr. Smith), who has lately been meritoriously engaged in investigating the etiology of epidemic fevers, that the advocates for contingent contagion violate that well-known rule of philosophizing which forbids us to attribute natural phenomena to a multiplicity of causes, which are explicable by the agency of a single one. Dr. Smith would exclude contagion altogether, as a propagating principle, from fevers of malaria origin, and attribute the whole of the effects to that poison alone ; but he will please to recollect, that the rules of philosophizing were intended to apply to inert or inanimate matter only, and that the laws of life, and consequently of disease, are too mysterious and complicated to admit of those limitations which govern the inanimate world. If we should adopt, however, the ingenious hypothesis of Dr. Good, that human contagion and malaria may be identical principles, and differ only in the mode and degree of elaboration, we should remove this objection altogether.

The noxious miasm which exhales from the surface of stagnant waters and marshy soils, exerts its deleterious influence over the whole of nature, corrupting and enfeebling, even before destroying, the fountains of life through the whole animal and vegetable kingdoms. Not only is man himself spiritless, tabid, and short-lived in marshy countries, but the brute creation never arrive at that degree of perfection and maturity which they attain in healthy situa-

tions, and exhibit in their haggard and emaciated forms the fatal effects of the surrounding pestilence, a state which is beautifully described by Virgil at the end of his third Georgic—

“ Hic quondam morbo cœli miseranda coorta est
Tempestas ; totoque autumnus incubuit æstu
Et genus omne neci pecudum dedit, omne ferarum
Corruitque lacus, infecit pabula tabo.”—*Georg.* 3. 477.

Man, however, is the principal victim ; even in the temperate climes of Europe we know what devastations fever annually commits in the neighbourhood of Rome and Leghorn, and on the coasts of Spain, Portugal, and Holland. In the intertropical regions, however, the effects of malaria are far more destructive than in the temperate climes of Europe. When the rainy season has terminated, and the drenched and swampy soil is exposed to the rays of a burning sun, the deleterious miasmata are not only disengaged in ten-fold quantity, but myriads of poisonous insects spring into life, which become more irritating to the inhabitants of those climates, than the burning atmosphere they breathe. In Mexico, we are informed by a late intelligent traveller, Captain Basil Hall, that the insect called the sand-fly penetrates with ease the finest musquito net, and instils his poison into every pore of the human body, and by this circumstance alone a perpetual fever of irritation is excited. The same gentleman describes a singular emigration which takes place annually from the

city of St. Blas, whose inhabitants, at the commencement of the unhealthy season, in the beginning of June, regularly migrate in a body to more salubrious quarters, and again return in November. When the Nile, Euphrates, and the Ganges have ceased to overflow their banks, and retiring within their channels have left the oozy soil exposed to the influence of a burning sun, it is then that pestilential fevers spring up and desolate the adjacent countries. To this cause are to be ascribed those endemic fevers which reign permanently in the torrid zone,—the yellow fever of the West Indies and America,—the Bulam fever of the coast of Africa, and the pestilential fevers of Bengal, Ceylon, and Batavia.

It appears to be a pretty general, but by no means, as we think, a universal law of nature, that fevers which originate from malaria, assume the intermittent or remittent character. Such are the fevers of Rome, where, we are informed by Dr. Clarke, that 1200lbs. weight of Peruvian bark are consumed annually. Such also the author supposes the yellow fever of Spain and the West Indies to be, in those cases where the type is not altered by the violence of the first attack, and the early development of inflammation. Such are the fevers of Holland, of which we had a fatal proof in the memorable expedition to Walcheren; and such the fevers which predominate in the fenny counties of England.

It is a curious fact, however, and well worthy the attention of the pathologist, that in Ireland, although we possess extensive tracts of bog, fen, and marsh, intermittent and remittent fevers are of comparatively rare occurrence. Intermittent fever is so unusual at Cork-street Hospital, that for three or four years preceding the present epidemic, the author had not met with a single case of this disease. We are informed by Boate that the quartan fever had never been known in Ireland, and that the tertian was only lately introduced. Yet it is not a little extraordinary that the Irish are remarkably susceptible of intermittent fever in England, few of the Irish labourers who migrate thither annually for employment escaping that malady. Continued fever, in its different forms, is the peculiar pestilence of Ireland, which, however, is far more prevalent in populous towns and cities than in the neighbourhood of marshes; the shepherd of the Bog of Allen feels none of that destructive influence which spreads desolation and misery through the crowded lanes and alleys of Dublin, Cork, and Limerick.

Epidemic fevers, whether intermittent, remittent, or continued, without distinction of type, had been attributed to atmospheric intemperature, or malaria, from the days of Hippocrates to those of Sydenham, who, in his *Schedula Monitoria*, expresses himself as follows:—“ Having, therefore, maturely considered those particulars, I have concluded, as I have else-

where remarked, that the change of a constitution depends particularly on some secret and hidden alteration in the bowels of the earth, communicated to the atmosphere." In the more classic days of medicine, although the existence and effects of contagion were known, it undoubtedly never appears to have been regarded as an active principle in the propagation of fever. The genius of Dr. Cullen, which succeeded in overthrowing the humoral pathology, proved equally successful in reforming the established etiology of fever. According to the theory of this distinguished and popular teacher, the agency of malaria is limited to the production of intermittent fever alone, whilst the power of propagation by contagion is supposed to belong only to two species of continued fever, which propagate their species by a specific action. This doctrine, however, notwithstanding its simplicity and merit, it must be owned, but ill supports itself against the tests of time and experience, and ill accords with the phenomena of those epidemic fevers we have recently witnessed in this country. The epidemic fever we have been just contemplating is now rapidly and unexpectedly disappearing, at a moment when the predisposing causes exist to the full as extensively as at the same period last year, when this malady commenced.

The author had the curiosity to make inquiry among the manufacturers of the Liberties as to the

present condition of the labouring poor of that district, and he has been assured, that at no former period were the distresses of the people more urgent than at the present moment. Many, it appears, have emigrated, and many have died of the late epidemic fever, but a vast number still remain in the most abject state of poverty and destitution.

Under these circumstances, then, has this epidemic fever terminated, and it appears utterly impossible to offer any rational explanation of its origin, progress, and decline, without admitting the agency of a morbid constitution of the air, to which we apply the term malaria. At the commencement of the epidemic it may be supposed that the influx of patients commenced earlier at Cork-street Hospital, which is in the immediate vicinity of the most distressed district,—the Liberties; but the author, on inquiry, finds that the influx commenced simultaneously in all the Dublin hospitals in the beginning of May, 1826, and that those hospitals which were most remote from the principal scene of distress, as Sir Patrick Dun's Hospital, and the hospitals of the House of Industry, felt the demand for admission as early as Cork-street Hospital. The character of this fever itself affords still stronger proof of its malaria origin, its striking analogy with intermittent fever, manifested by its tendency to frequent relapses, its short periods, and on the decline of the epidemic, its positive conversion into

this disease in several instances. Its appearance also in summer, and its arrival at its height in autumn,—the seasons in which exhalations from the earth are disengaged in greatest abundance, and in which not only those exhalations, but human contagion itself become more volatile, diffusible, and deleterious, lead the mind insensibly to the same conclusion. The fact has already been noticed by Dr. Barker in his able Report of this hospital for the years 1817-18, that nearly all our epidemic fevers in Ireland, as well as those of other countries, have made their appearance in the summer or autumn, and the present malady has not deviated from this law. In fine, although the author is convinced of the contagious nature of this fever, he cannot help entertaining a belief that it was engendered, and propagated also to a very considerable extent, by a morbid state of the atmosphere.

The author regrets that he cannot, from his own observation, give any information on the morbid anatomy of the late epidemic fever, such examinations not being permitted by the regulations of this institution. The following abstract of dissection made at Sir Patrick Dun's Hospital by an able anatomist, Surgeon Jacob, will, however, he trusts, afford a sufficient view of the organic injuries consequent to the disease, and of the causes of death.*

* The concluding dissection was made by Mr. Nalty, the apothecary.

*Abstract of Dissections made at Sir Patrick Dun's Hospital of
Persons who died of Continued Fever in the years 1826-27.*

<i>Name, Date, &c.</i>	<i>Head.</i>	<i>Thorax.</i>	<i>Abdomen.</i>
Mary Magen- nis, æt. 50, Nov. 23d, 1826. Body covered with purple spots, and blood fluid in the veins.	A large quantity of fluid between dura ma- ter and surface of brain; fluid also ef- fused between arach- noid and pia mater; several red patches, caused by effused blood on the surface; on making a section of medullary part it is profusely dotted with red spots; cerebellum in the same state.	Pericardium con- tains half an ounce of serum; heart distend- ed with fluid blood; lungs do not col- lapse, shewing ob- struction in the bronchial tubes.	Stomach distended with flatus; the se- rous membrane ge- nerally inflamed;— small intestines vas- cular, and turgid with blood in some places; liver dis- eased, and adherent to diaphragm; spleen soft as if in a state of putrefaction.
Eliza Gro- gan, æt. 21, Dec. 23d.	On raising cranium much dark blood flow- ed from torn vessels; effusion of gelatinous fluid, and of blood un- der arachnoid, which is thickened, and pre- sents some flakes of firm lymph on surface; ventricles contain some fluid, but are not dis- tended; theca verte- bralis full of serous fluid.	Viscera sound.	Viscera sound.
Hen. Stokes, æt. 20, Feb. 12th, 1827.	On raising dura ma- ter fluid escapes. Ven- tricles contain an oz. of fluid; vessels more turgid than natural; substance of brain re- markably firm.	Viscera sound.	Viscera sound.
B. Gahan, æt. 43, March 17th, 1826.	Large quantity of fluid beneath dura ma- ter. Effusion between arachnoid and pia ma- ter; brain firmer than natural. Ventricles con- tained some fluid, and some also found at the base of the brain.	Viscera sound.	Viscera sound.

<i>Name, Date, &c.</i>	<i>Head.</i>	<i>Thorax.</i>	<i>Abdomen.</i>
Wm. Black, æt. 23, October 3d, 1826.	Brain healthy.	Viscera sound ; but mucous mem- brane of bronchia more vascular than natural.	Mucous membrane of stomach marked with patches of ef- fused blood, and pre- senting a blood-shot appearance : duode- num and jejunum similarly marbled ; liver, &c. healthy.
Mary Devine, æt. 20, Dec. 27th, 1827.	Arachnoid opake ; there is some gelati- nous fluid effused un- derneath ; effusion is most remarkable in su- perior part of each he- misphere ; vessels not very turgid, but sub- stance of the brain firm.	Viscera sound.	Viscera sound.

JOHN O'BRIEN, M. D.

Great Brunswick-street,
July, 1827.

I N D E X.

A.

	Page.
ALBUGO, treatment of,	13
Antimonial emetics, useful when the lungs are oppressed,	53
Air, analysis of, in a case of pneumothorax,	146

B.

Bleeding, of use to children in peripneumonia,	48
Blisters, care necessary in applying to infants,	55
Baron, Dr., his opinion of the origin of tubercular accretions,	132
Blaps mortisaga ejected from the stomach and bowels,	182
Bark, use of, in inflammation of the eyes after fever,	294
Belladonna, extract of, useful in iritis,	475
Board of Health, communication from, to physicians of hospitals,	517

C.

Cornea, ulcer of, nitrate of silver useful in,	2
———, slough of,	7
Cinchona, useful in slough of cornea,	ib.
Cuming, Dr., on peripneumonia of children,	28
Crampton, Dr., case of open foramen ovale by,	71
———, his case of tubercular affection of the skin,	125
Cough, hysteric, character of,	157
———, treatment of,	160
Clear, Mr., his observations on the insects in Riordan's case,	194

	Page.
Catarrhal fever terminating in phthisis, . . .	310
Contagion, proofs of, in fever of 1826, . . .	558
———, what the term means, . . .	560

D.

Daly, Dr., extirpation of tumor from neck, case of, . . .	84
Dissections, abstract of, at Sir P. Dun's Hospital during the fever of 1826,	570
Dysentery, epidemic, Dr. O'Brien on, . . .	221
———, treatment of, by Dr. O'Brien, . . .	230
———, abstract of dissections in, at Sir P. Dun's Hospital,	243
———, hydrochloruret of lime, its use in cases of, . . .	295

E.

Ephemera, case of,	562
Eye, Mr. Ryal on diseases of the, . . .	1
——, inflammation of the, after fever, bark useful in, . . .	294
——, internal inflammation of the, after typhus fever, . . .	468

F.

Foramen ovale open, case of, by Dr. Crampton, . . .	71
———, not perfectly closed, . . .	154
Fever, epidemic of 1826, clinical observations on, by Dr. Reid,	266
Fever Hospital, Cork-street, Dr. O'Brien's report of, . . .	512
Fever hospitals, utility of,	524
Fever, Sydenham's plan for improving practice in, . . .	514

G.

Gangrene of the feet, cases of, in the tents at Cork-street Hospital,	541
--	-----

H.

Hip dislocated, dissection of, by Mr. Wallace, . . .	250
Hydrochloruret of lime, of use in fever, . . .	281
Hæmorrhage, from the bowels, fatal case of, . . .	320

	Page.
Hydrocephalus, nature of, by Dr. Mills, . . .	350
—————, acute cases of, . . .	353
—————, chronic, cases of, . . .	398
—————, history of, . . .	433
—————, disquisition on, by Dr. Mills, . . .	442
—————, diagnosis of, . . .	446
—————, treatment of, . . .	447
—————, chronic diagnosis, and treatment of, . . .	454
—————, prophylaxis in, . . .	457
Hydrocyanic acid, useful in difficult respiration, . . .	479

I.

Ipecacuan, emetics of, useful in menorrhagia, . . .	18
Iritis, extract of belladonna useful in, . . .	475
Iodine, useful in indurated enlargement of the uterus, . . .	506
Infection, what the term means, . . .	560
Jacob, Dr., on internal inflammation of the eye after fever, . . .	468

M.

Muscles of a dislocated limb, important changes in the, . . .	259
Mills, Dr., on the nature of hydrocephalus, . . .	350

N.

Nitrate of silver, useful in affections of the eye, . . .	1
—————, contra-indication for the use of, . . .	5
—————, use of, in protrusion of the iris, . . .	8
Nebulous cornea, treatment of, . . .	10
—————, case of, . . .	11

O.

Osborne, Dr., on the use of ipecacuan in menorrhagia, . . .	18
—————, on the sensible qualities of plants, . . .	96
O'Brien, Dr., on epidemic dysentery, . . .	221
—————, report of Fever Hospital, Cork-street, . . .	512
Opium, tincture of, useful to children after excessive bleeding, . . .	50
Ophthalmia, from fever, cured by small doses of bark, . . .	294

P.

	Page.
Pustular ophthalmia, what,	5
—————, its treatment,	6
Palpebræ, granular, treatment of,	15
Plants, on the sensible qualities of,	96
———, arranged in groups according to their sensible qualities,	105
Peripneumonia of children, Dr. Cuming on the,	28
—————, fever high in,	35
—————, state of the pulse in,	ib.
—————, most prevalent in winter and spring,	39
—————, morbid appearances in,	41
—————, prognosis in,	44
—————, treatment of,	46
—————, cases of,	57
Pickells, Dr., his sequel of Mary Riordan's case,	171
Pneumothorax, case of,	138
—————, dissection of,	486
Pneumonia, double case of,	154
————— supervening in fever, case of,	162
Pulmonary disease cured by hydrochloruret of lime,	290
Phthisis pulmonalis, clinical observations on,	303

R.

Ryall, Mr. Isaac, on diseases of the eye,	1
Riordan, Mary, sequel of her case, by Dr. Pickells,	171
Respiration, difficult, cured by hydrocyanic acid,	479
Reid, Dr., clinical observations on epidemic fever of 1826,	266
Ryan, Dr., his case of difficult respiration,	479
Report, medical, of Cork-street Fever Hospital,	512
Relapses in fever of 1826, very frequent,	529

S.

Sulphate of quina, useful in slough of the cornea,	7
Steatomatous tumor extirpated from the neck,	84
Skin, tubercular affection of, by Dr. Crampton,	125

	Page.
Stethoscope, cases to illustrate the use of, . . .	137
—————, appendix to ditto, . . .	485
Spinal marrow, effects of division of, . . .	197
—————, dissection of a case of, . . .	211
Stokes, Dr. Wm., clinical observations on phthisis pulmo- nalis by,	303
————, Mr., his case of fever cured by hydrochloruret of lime,	287

T.

Townsend, Dr., cases to illustrate the utility of the ste- thoscope, by,	137
————, his appendix to ditto,	484
Turpentine, spirit of, large doses of, given in a case of in- sects in the intestines,	175
Thompson, Dr., his letter to Dr. Pickels relative to Mary Riordan's case,	192
Tartrate of antimony given to check vomiting in a case of division of the spinal marrow,	206
Tubercles in abdominal and thoracic viscera, case of, . . .	305
Tumor, steatomatous, extirpated from the neck,	84
Tartar emetic, useful in hydrocephalus,	452
Thetford, Dr. his case of indurated enlargement of the uterus cured by iodine,	506
Thermometer, unusual height of, in 1826,	514

V.

Vinous tincture of opium aggravates ulceration of the cornea,	5
--	---

W.

Wallace, Mr., his case of division of the spinal marrow, . . .	197
————, his case of dislocation of the hip,	250

THE END.

